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BUTANE-PROPANE Technology News

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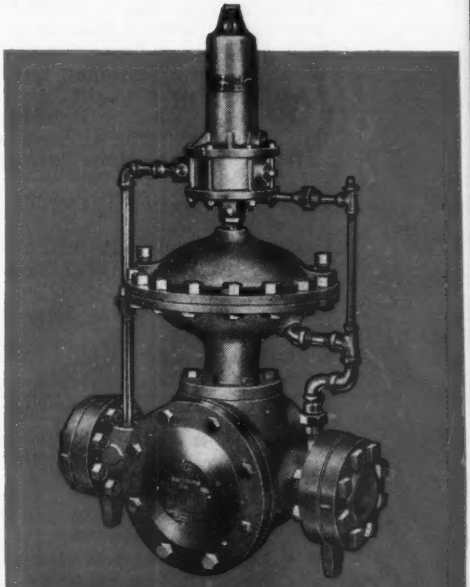

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BUTANE-PROPANE *News*

Reg. U. S. Pat. Off.

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LETTERS

Have you service or operating problems? Submit them to us and our technical department will endeavor to help you.—Ed.

•

Gentlemen:

I note in your April issue in the "Letters Department" an inquiry regarding flexible hose for handling LP-Gas at temperatures as low as 50° below zero.

My company has sometimes substituted for hose a Chiksan swivel joint and pipe. These will stand 500 pounds pressure. While we do not know how they would operate at the low temperature named, I think it would be worth while to experiment with them.

J. B. T.

California

The Chiksan Tool Co., Ltd., of Fullerton, Calif., states that its swivel joints have commonly functioned at 20° below zero temperatures and definite tests at 65° below zero have proven successful.

At most temperatures, should other packing crystallize, asbestos packing may be substituted.—Ed.

•

Gentlemen:

We have a problem of measuring butane gas by means of a cubic foot meter and would appreciate very much you giving us proper answer.

We have installed several underground butane tanks from which we sell butane gas to various customers. The meters used are cubic foot meters and we wish to charge for this gas at the rate of 14c per gallon.

In order to arrive at this charge per gallon, what would be the correct charge per cubic foot of gas registered by the meter? The butane used is a standard mixture of butane propan used in south-Alabama.

In computing the proper charge per cubic foot, make no allowance for shrinkage or other losses.

W. R.

Alabama

On Page 22, "Handbook Butane-Propane Gases," you will find that propane produces 36.45 cu. ft. per gallon and normal butane 31.79 cu. ft. per gallon.

We will assume you are receiving a mixture of 40% propane and 60% butane.

To determine the cubic feet from the mixture, perform the following arithmetic:

$$36.45 \times .40 = 14.580$$
$$31.79 \times .60 = 19.074$$
$$33.574$$

Divide 14 cents by $33.57 = .365$ cents per cu. ft., or, 36.5 cents per hundred cu. ft.

You can check with your supplier and get the proportions of butane and propane in your fuel and determine the proper price by substituting the percentages you get for the ones we assumed.—Ed.

•

Gentlemen:

The distributors of LP-Gas systems for conversion of internal combustion engines are getting something really worth while out of the BUTANE-PROPANE *News*.

The article in January by Harold Smith and the one in March by Paul Lady should be commended very highly. Both tell a very interesting story in a way that anyone can understand without holding an engineering degree in heating and ventilating. They are ideal in helping our representatives put across a story that most people look on as a gross exaggeration.

This company has been associated

with the LP-Gas industry for many years as a distributor for the American Liquid Gas Co. of California. As such, we have sold, before restrictions, many conversion units for gasoline engines and have received numerous inquiries on diesel engine conversions. We have hesitated to act on the latter because of the lack of necessary information on such jobs.

More articles like Paul Lady's will help clarify this situation and should the powers that be decide to release equipment for such conversions we will be able to help the war effort by keeping those units going which might otherwise have to stop.

We have a good many conversion units in stock with suitable propane tanks for gasoline or diesel conversions but all we lack is a little more information on the latter.

We sincerely hope that many more articles like the above mentioned will appear in your future issues.

S. M. S.

Illinois

While the war is still on and restrictive orders limit conversions, we think the time is now suitable to give the industry a good deal of information along this line to help it to prepare for postwar activities, in this department.

If you liked the story by Paul Lady in our March issue, you will find that he has done an even better job in our April issue. He gives readers a great deal of detailed information that can be capitalized upon. Other articles upon diesel and gasoline engine conversions will follow from time to time.—Ed.

•

Gentlemen:

On Page 30 of the April issue of BUTANE-PROPANE *News* I found a very interesting article on "Safety" with regard to handling LP-Gas.

I wish to inquire if you know whether there is available any books or literature on this subject.

In the article referred to above there is mention of NBFU No. 58 bulletin and I would appreciate knowing how to obtain this bulletin.

C. F. H.

New York

As far as I know, there is no published work upon this subject except a chapter devoted to it in our "Handbook Butane-Propane Gases." We have articles frequently upon this subject in BUTANE-PROPANE *News* but they have never been bound into one volume.

Pamphlet No. 58 of the National Board of Fire Underwriters may be had free of charge by writing to the National Fire Protection Association at 60 Batterymarch Street, Boston, or to the National Board of Fire Underwriters at 85 John Street, New York City. This is a code book, issued by the Underwriters for our industry and is the basis of most statutes wherever and whenever state legislation has been enacted covering our industry.—Ed.

•

Gentlemen:

Am enclosing check in the amount of $4 for which please forward us The Bottled Gas Manual.

Could you or someone in your office forward me the following information at an early date:

(1) What the kilowatt cost of electricity would have to be to equal the cost of propane for cooking purposes.

(2) What the kilowatt cost of electricity would have to be to equal the cost of propane for cooking, refrigeration, hot water heating.

If you have no definite comparisons on the above give us the nearest approximation.

T. M. O.

Connecticut

In the "Bottled Gas Manual," which is being sent you, will be found (on Page 251) complete data upon the comparative costs of electricity and propane for cooking and other domestic purposes.—Ed.

•

• **BUTANE-PROPANE *News* welcomes letters from our readers, but it must be understood that this magazine does not necessarily concur in opinions expressed.—Editor.**

COMMENT

PUMPS in our industry are like hearts in humans—vital to existence. Have you ever had any liquid transfer problems? Many a difficulty will be explained in a new series of articles starting this month, and many a dealer will save money by reading it.

•

Newly elected officers are picking up the reins in organizations composed of liquefied gas men — the NGAA, the LPGA and the several Sections of the latter—to say nothing of a brand new association that has announced its ambition to serve retail dealers.

Change is in the air in industry as well as politically.

•

At first thought it would seem that June is an inappropriate season to discuss space heating problems.

Actually, there is no out-of-seasons for any branch of our industry. The dealer who paves the way for FUTURE *sales always has an ace in the hole.*

An article on Page 103 gives a brief method of figuring heat losses in all buildings. It will be handy for those who are working with contractors and home-builders in designing homes and factories which provide for built-in heating equipment.

•

When war came and restrictions fell thick and fast, dealers just didn't see how they could stay in business.

Users were frightened into believing they would be deprived of the necessities and conveniences to which they had become accustomed.

Prospective customers wrung their hands in chagrin and returned to their wood piles.

Actually, it wasn't all bad. Read the accounting under, "What the War Brought."

•

Sales activities soon (we hope) will be the order of the day—again.

Forward-looking firms are giving thought to the subject, laying plans, casting about for ideas.

No dealer can afford to postpone his sales plans till the whistles of victory blow. Another constructive article dealing with this subject is set forth on Page 44 by George H. Schlatter.

It will clarify your thinking!

•

The need to play safe faces every industry man with every move he makes. Truck operation presents the main hazard, one that can be met largely if handlers of LP-Gas will follow the advice of those who know the answers.

There are two safety articles in this issue—one on trucks and the other on consumer instruction. Read them!

•

Look to the shoe factory in your town for an unsuspected load. And look to Mr. Turner's inspiring article on Page 82 for the facts you need to know. There'll be more to follow.

•

There can be no lifting of restrictions on the distribution of liquefied petroleum gas till the Pacific war is won, says the PAW. But this situation could change quickly. Meanwhile, appliances and equipment will be manufactured in increasing quantities.

By Ed.

THE NEW FREEDOM GAS KITCHEN
featuring a fine ROPER GAS RANGE

With rural pockets jingling to the tune of twelve billion dollars an thousands of families in your community waiting for new household appliances, it's time to start broadcasting the plus values of the modern ROPER GAS RANGE.

Here is a range that truly offers everything . . . beauty, speed, economy features, performance, foods that are the last word in vitamin laden goodness. You'll want to place Roper at the top of your list of plans for the future.

GEO. D. ROPER CORPORATION, Rockford, Illinois, manufacturer of ROPER, *"America's Finest Gas Range"*, built specially for use with L.P. (Liquefied Petroleum) gas.

Offices and Warehouses in Atlanta - Boston - Chicago - Cincinnati - Cleveland - Dallas - Denver - Los Angeles - Oakland - Philadelphia - Pittsburgh - Portland.

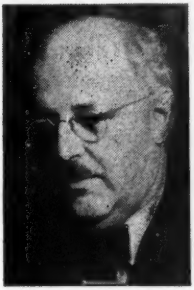
ROPER GAS RANGES

MAINLY BEYOND THE MAINS

By ELLIOTT TAYLOR, Washington Editor

Coming Closer

It's too new to be news as yet, but there are signs that the old aloof attitude of the gas utilities, as represented by the American Gas Association, is thawing out a little with respect to the butane - propane business; and sometime between now and V-J day, let's say, there will be an understanding that will result in closer cooperation between the old timers and the new timers in the perfect fuel purveying business.



ELLIOTT TAYLOR

As is well known, some liquefied gas operators have long been advocating a joint advertising campaign with the gas association, and for just as long a time they have been studiously and firmly rebuffed.

That this official attitude on the part of the AGA was the result of the insistence on the part of combination gas and electric companies has often been denied, but it has dictated the final policy with respect to joint national advertising, nonethe-less.

Now the gas utility industry is on the threshold of the biggest advertising campaign in its history, with an appropriation that will run to nearly a million dollars for publication space, alone, during the forthcoming fiscal year.

It is too early to make predictions, since the association's year does not start until October, but at an informal meeting between advertising committee members of the Liquefied Petroleum Gas Association and the AGA, there was every indication that a working plan of joint participation can be worked out. The most hopeful sign, in our opinion, is the fact that for the first time representatives of combination gas and electric utilities express themselves as being in favor of including reference to liquefied gas in future gas industry advertising copy.

The advantages to both liquefied and utility gas companies of such an accord are too obvious to require much argument. Butane and propane share the prestige and the position of a much older, a much more established and a better known industry; whereas, the gas utilities aid in the development of

the factor, and the only one, that can safeguard for gas the new postwar construction and residential developments that will reach out beyond present city gas mains.

It is a situation and a setting that is ripe for cooperation, for it is one in which each side stands to gain far beyond the costs that would be involved, if they do cooperate. And both stand to lose far more than they save if any longer they allow minor differences to stand in the way of a joint advertising presentation of the great story that gas, any kind of gas, has to tell.

No Relief

There is no relief in sight for the liquefied gas industry, as far as new installation restrictions are concerned, and, contrary to some hopes and expectations, this will apply to propane as well as to butane. During the summer months there will be no shortage of either of these fuels, and it is likely that propane will be in ample supply all next winter.

But the pressure cars to handle the movement is another story. The army says it will require more liquefied gas for standby and firm fuel in war plants than it used last winter; and at the same time the army has refused to build any new propane cars to handle the load. Since PAW had estimated that 700 new cars would be required, it looks very much as if the same serious bottleneck that occurred in the winter of 1944-45 will be with us again.

A slight easing of L-86 to permit the installation of domestic equipment removed from service since Feb. 15, 1945 (providing it is connected only to non-heating appliances formerly using liquefied gas, is generally anticipated and may even be announced before these words are read. PAW is following the policy of granting L-86 exceptions to returning veterans of the present war, but here there is no automatic exception policy in prospect, and every case must be submitted in detail on the old WPB 809 form, which the industry in general and the PAW too, no doubt, has come to loathe.

New Banner

The announcement of the formation of a new national liquefied gas trade organization, the American Butane-Propane Distributors Association, with headquarters in Minneapolis, Minn., will not come as either a shock or a surprise to many operators in the industry. They have watched for years and with varying shades of impatience the apparent inability of the Liquefied Petroleum Gas Association to formulate an appeal or to project an activity that would bring the rank and file of the dealers and distributors into line.

A survey of the articles of in-

corporation of the new association indicates that it is intended to be primarily a gas man's organization. The only active members are to be those who are engaged in "distributing liquefied petroleum gas to dealers or consumers." Butane and propane producers, as well as the manufacturers of appliances and equipment, will be eligible to associate memberships only. The voting system is to be democratic, with one vote, only, to every active member.

These latter provisions indicate a determination on the part of the incorporators of the association to remove two of the most troublesome barriers to association progress—the domination of the industry by its suppliers of gas and equipment, and the resentment over an undemocratic voting procedure, designed to protect the big interests from the accumulated voting strength of those paying smaller dues.

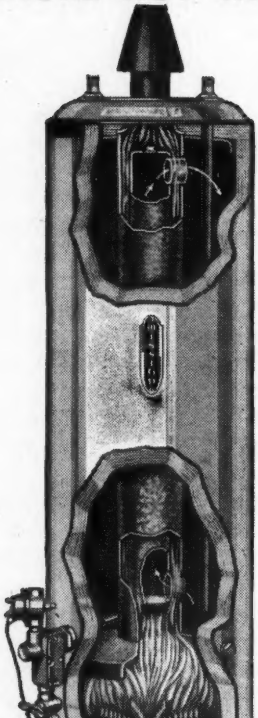
We have always welcomed the appearance of a new name on the roster of gas dealers' organizations, feeling that if the new group is needed it will quickly establish a place for itself in the industry, and if it is not needed, it will just as quickly fade back into obscurity or disappear entirely from the scene. On this principle, as well as because of the fact that we have an abiding admiration and respect for many of the operators whose names appear as officers and directors of the B-PDA, we greet with particular interest and best wishes the new incorporation.

On the surface of things, it would appear that its members face a great opportunity to fill a niche that was largely left vacant in the LPGA halls, that of dealer and distributor representation. But inviting dealers and distributors to join and support a trade association is one thing, and getting them to contribute not only their financial support, but their time and energy as well, is quite another. The measure of the Butane-Propane Distributors Association's success will be precisely proportionate to the amount of loyalty and devotion that its organizers, its members and its well wishers bring to the solution of the common problems that will be attacked.

We foresee no need for jurisdictional disputes, for the overlapping of authorities or for duplication of effort between the two national organizations in the industry. Each may have its exclusive adherents; many operators who are eligible may decide to become members of both.

We are convinced that thousands of dealers who presently are members of no association at all will become interested in, and members of, the first one to show them reasonable promise of a run for their money. And more power to whoever has the imagination and the ability and the will to get them all in, where they all belong, under some industry trade organization banner.

MORE HOT WATER PER MINUTE *At Less Cost*



MISSION SENIOR

Notice the unique inner construction of Mission Senior (see cutaway view).

The water circulation of Mission Senior (indicated by arrows) is through the inner tank into the outer tank, making hot water available on first circulation.

The full effect of the Bunsen Burner heat is absorbed by 8¼ sq. ft. of metal in direct contact with water (the combined surface area of the inner and outer tanks exposed to direct heat).

Ordinary heaters offer but 3¼ sq. ft. of heating surface to direct heat action.

This plus value of 5 extra sq. ft. of heating surface in Mission Senior operates to the user's advantage every minute the Burner is on.

Thermostatically Controlled Temperature . . . 100% Safety Control Valves . . . LP Gas Bunsen Type Burner.

MISSION WATER HEATER COMPANY

HEADQUARTERS PLANT: 7101 McKinley Ave. Twinoaks 1164 Los Angeles 1

Tank Truck Design

By COL. GEORGE A. BURRELL

President, Atlantic States Gas Company, Inc., New York City

THERE is no subject of greater importance to liquefied petroleum gas men than safety. And there is no department where safety precautions are as vital as in truck operations — transporting and transferring of fuel.

COL. G. A. BURRELL

Few men in the industry have given as much time and thought to safety as has Col. Geo. A. Burrell, president of the Atlantic States Gas Co., New York, and, during the past year, chairman of the Safety Committee of the Liquefied Petroleum Gas Association.

Col. Burrell herewith describes important features incorporated in his company's transport and delivery trucks. These features are not limited to the bare code requirements of the National Board of Fire Underwriters.

These trucks have two large fire extinguishers and two safety valves instead of one of each, as specified by the code; a quick-closing, internal valve which remains closed except during delivery operations; an open or ventilated compartment for holding the hose; wheel blocks, and no streamlining.

A photograph of an Atlantic States Gas Co. tank truck is shown which helps the reader to visualize Col. Burrell's description of its safety features. Next month he will present safety rules for filling tank trucks, filling above- and underground consumer tanks, and precautions for truck drivers.—Editor.

Streamlining of Trucks

The illustration shows a 1,000-gallon truck for delivery of gas to consumers and is mounted on an International chassis. It is not streamlined. There is a difference of opinion about streamlining, of course, and at one time all of the writer's trucks were so mounted. Good looking and well kept streamlining does add to the appearance of a truck, but it is the flimsiest part of a truck and is the first to get into disrepair. It adds up to 1,500 lbs., or so, to the weight of a truck; obscures the driver's vision to some extent; prevents easy inspection of the piping for leaks or other trouble; and provides channels through which fire can sweep from one end of the truck to the other, in case the truck catches fire.

A standard delivery truck of Atlantic States Gas Co., New York, which is equipped with many safety devices not yet required by the present NBFU code.

A standard delivery truck of Atlantic States Gas Co., New York, which is equipped with many safety devices not yet required by the present NBFU code.

However, there is something to be said for heavy skirting on a truck to take up the shock of "amidship" collisions. Some of the advantages above mentioned would be sacrificed, but even so, many trucks are so equipped. But with heavy piping and fittings and an automatically closed internal valve on the gas discharge line, danger of a fire of consequence from an "amid-ship" crash is not great.

Safety Valves

There are two safety valves, countersunk on the top of the tank. Covers are provided for the recesses. One safety valve should be adequate, but an extra one provides a safety factor in case one of the valves is out of order. The safety valves are countersunk so as to be safe against breakage in case of an accident.

There is still a question in the writer's mind about countersinking them in that a careless overfilling operation would bring liquid above the recess with consequent discharge of liquid due to expansion in hot weather. But here one has to take a chance against somebody's carelessness that we can only guard against by training our truck operators as well as possible. The alternative to countersinking them is to provide a stout collar around protruding valves. On the recessed ones it is not too easy to design covers that will keep out snow, rain and ice. A cover with a lip extending well beyond the recess is needed.

Everybody who operates tank trucks carrying liquefied petroleum gas knows the importance of safety valves. They enable the gas to escape in case of overfilling and consequent expansion due to temperature rise, or in case the truck catches fire. Otherwise, the tank is apt to burst and throw its contents over a wide area.

Bad accidents have occurred where the escaping gas has flooded a wide area around the truck. One wants the gas to burn at the truck, if it comes out in quantity, even if the chassis is destroyed. It is the industry's opinion, I believe, that with the safety valve outlet on top of the tank, escaping gas in dangerous quantity will also catch fire from a fire of any consequence on the truck as from a leak in the piping or hose.

Hose Container

The container for the hose at the rear of the truck is an open basin. On some of the writer's trucks, from which the streamlining has not been removed, there is a closed compartment, with doors, for holding the hose. But since an accident to one of my trucks, where the fire started in this compartment, either open basins are used like on the truck herewith illustrated or the hose compartment has been well punched with holes to provide thorough ventilation in case gas escapes from the valve at the end of the hose.

Collar at Rear of Truck

It will be noticed that there is a collar protruding from the rear of the truck. This protects against a bump from the rear, the slightly ex-

posed external parts of a Roney rotary gage, used for measuring the contents of the truck. In case of a dished head on the rear of a tank this dishing will provide all the protection needed. It is preferable.

Fire Extinguishers

There are two good sized liquid carbon dioxide fire extinguishers on the truck. One of them can be seen slightly forward of the tank on the right hand side. A mistake is frequently made in not providing one big enough, and only one of them, instead of two. Fire extinguishers on a truck have put out many a dangerous blaze. They should be frequently inspected.

Internal Hydraulic Valve

The truck illustrated is equipped with a Shand & Jurs internal hydraulic oil operated valve. All my trucks are so equipped. The operating handle will be noticed in place between the fill pipe of the truck and the fire extinguisher. This valve closes the gas discharge opening right at and inside of the tank. It is always closed except when the truck is being filled or when it is discharging gas in a customer's tank.

Further, it is so connected to the drive shaft that when the truck motor starts the valve automatically closes. Also, if the motor is thrown into low or reverse gear, when the truck stops, the valve will automatically close in case the truck shifts its position from where it is standing. The Shand & Jurs Co. have improved on this by attaching the valve to the brake of the truck, so that the valve automatically closes when the brake is released.

Further, the valve is connected with tubing that circles the truck body, this tubing being fitted with fuse plugs which melt and close the valve in case of a fire occurring when the valve is open.

Other Safety Features

Other safety features of the truck are extra heavy piping and fittings, a stout rear bumper, internal baffles to prevent surging, and wheel blocks which are carried in receptacles on the rear fender. These blocks are always placed against the wheels when the truck is standing. The usual drag chain is shown suspended from the rear of the truck. Electric wiring passes through strong conduits. A check valve is placed on the fill pipe.

Tank Truck Accidents

I would like to say something about the cause of liquefied petroleum gas tank truck accidents. Here I am quoting largely from a report that A. N. Kerr, Los Angeles, sent me about a considerable number of such accidents which he has analyzed. He finds that overfilling of tank trucks is the cause of most of the accidents about which he secured data, and says that outages are figured on a temperature of 115° F. in Texas, Oklahoma, and parts of California, whereas metal, say truck tanks, can attain temperatures very much higher than this.

Next month: "Safety Rules for Tank Trucks."

PUMP PROBLEMS

Cause and Prevention of Vapor Lock

By R. STANLEY SMITH

Manager, Smith Precision Products Co., South Pasadena, Calif.

PROBLEMS involved in liquid transfer are rated among the most important confronting operators throughout the country today. Much technical and engineering information is required to properly install a pumping system and keep it efficiently at work.

We begin a series of articles this month which will enable pump users to better understand and correct difficulties which may arise in the field.

R. Stanley Smith, manager of Smith Precision Products Co., South Pasadena, Calif., manufacturers of Smith butane-propane pumps, reveals in the accompanying Questions and Answers ways to avoid some of these difficulties in pumping butane and propane. Next month we will publish the second in the series by Mr. Smith entitled, "Pump Starvation; Cause, Effect and Cure."—Editor

•

What is meant by "vapor lock," in an LP-Gas pumping system?

When a butane or propane pump fails to deliver, one of the reasons frequently found is that the pump and pump intake lines are filled with vapor instead of liquid. Such a condition is usually referred to as "vapor lock."

What effect does this have on pump operation?

The presence of vapor in the pump or pump intake in any quantity, is almost certain to partially or completely stop the pump delivery, since the pump is unable to "take hold" of the vapor and expel it against pressure.

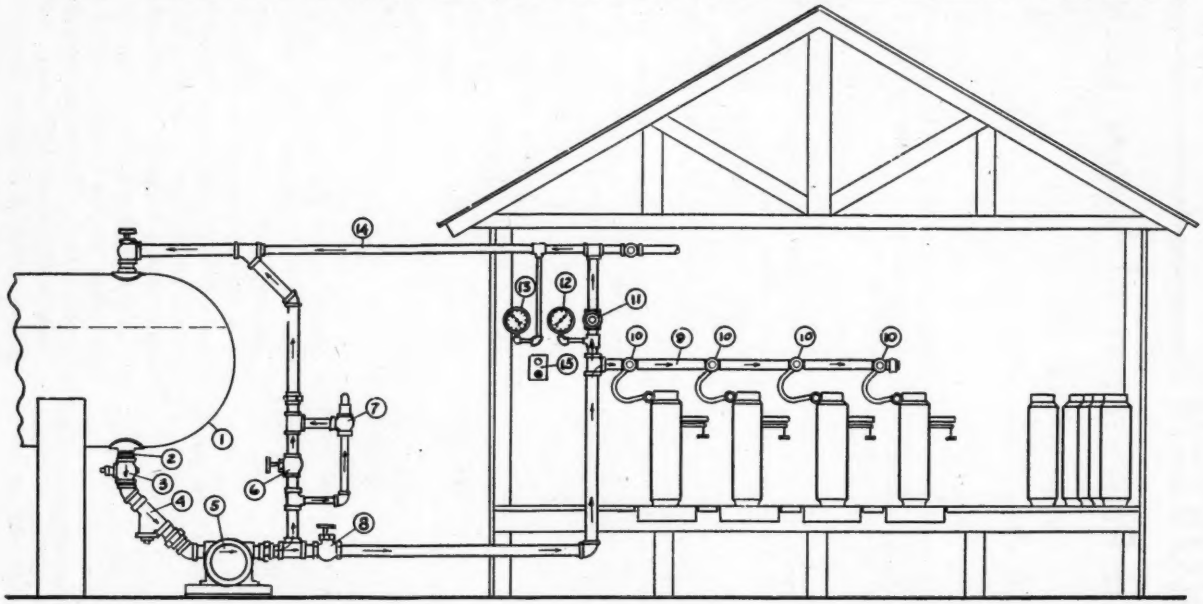
What is the cause of vapor forming in the pump or other parts of the system?

There are a number of possible causes, probably the most usual one being that, for some reason, this particular part of the system becomes heated to a higher temperature than exists in the storage tank from which fluid is being pumped.

Why should a greater heat in one part of the system cause vapor to be formed there?

Butane and propane develop a certain vapor pressure in the supply tank which is exactly in accordance with their temperatures. If the temperature of the liquid rises in the tank, some of the liquid vaporizes and tends to establish a higher vapor pressure. If the temperature drops, some of the vapor condenses and a lower pressure is registered on the tank gauge. For the same reason, if any connecting part of the piping system becomes warmer than the storage tank, liquid will vaporize at these warmer spots and this vapor, being at a correspondingly higher pressure, is capable of backing up the liquid toward the storage tank. This vapor formation can, under certain piping conditions, entirely evacuate these particular pipe sections.

LAYOUT FOR SMALL BOTTLING PLANT WHICH GIVES EXCELLENT SPEED CONTROL AND MEANS FOR INITIALLY CLEARING ALL GAS FROM THE PIPE LINE, THEREBY ELIMINATING THE DANGER OF VAPOR LOCK.



This layout shows the incorporation of manual by-pass valves in addition to the usual spring-loaded emergency by-pass. The drawing is diagrammatic and does not attempt to show additional shut-off or emergency valves which might be included to suit individual convenience and safety requirements. In this drawing (1) indicates the propane tank which should be mounted at least 4 feet above the pump intake. It is equipped with an excess flow valve (2), shut-off valve (3), strainer (4), positive displacement rotary pump (5), hand by-pass valve (6), and automatic spring-loaded by-pass valve (7). The line to the bottling platform is provided with a shut-off valve (8), and discharges to manifold (9) which has 4 bottle valves (10) serving 4 platform scale bottling units. A hand control valve (11) is conveniently placed beside the high and low pressure gages (12) and (13), for manual adjustment of the pressure. Fluid passing through valve (11) is returned to the supply tank through vapor return line (14). An explosion-proof push button (15) is also conveniently placed to stop and start the motor operating the pump.

What could cause such heating of any part of the system?

In some cases, the pump and intake lines may be directly exposed to the sun's rays, and become much warmer than the storage tank. In some cases, in the colder climates, pumps are placed within a heated building, while the storage tank is subjected to the outside colder temperature.

Are there other reasons for bringing about the formation of vapor in the pump?

Yes, one case being the possible development of heat by pump operation through friction within the pump. This effect is particularly noticeable if, for any reason, the pump is operated in a nearly dry condition, as when the storage tank is completely emptied. The same result sometimes occurs when the pump is operated with a clogged strainer which prevents an adequate flow of fluid to the pump, or when the pump is operated against a closed valve, without a properly installed by-pass or relief valve. A somewhat similar condition also exists when a large capacity pump is operated under a very restricted flow, as when tanks are being filled through very small fittings.

Does a by-pass valve cause such heating?

Yes, this is also quite frequently a hidden cause of vapor lock, particularly if the by-pass is of the built-in type, or if the piping layout is such that the by-passed fluid is piped back to the pump intake, as is frequently done.

Why does this cause heating?

Assuming that the pump is started against a closed discharge line, and that the fluid in the pump is therefore forced back through the by-pass valve into the pump intake, all the energy consumed in the pumping operation is reconverted into heat which appears in the circulated liquid. Each time the same fluid is re-pumped and returned through the by-pass valve, the heat of the liquid increases, eventually passing the boiling temperature, with the result that some of the liquid is converted into gas.

What is the effect of this?

As explained above, such a conversion of liquid to vapor may create within the pump a higher pressure than exists within the storage tank, the result being that all the liquid in the pump and intake line may be forced back into the storage tank, leaving the pump and intake line quite dry.

Does this interfere with the operation of the pump?

Yes. It is impossible for any pump to operate efficiently, if at all, when it is filled only with vapor.

How can the trouble of vapor lock be overcome?

The surest way is to avoid in the original layout, any of the items which might cause the development of heat at any point in the system, to a temperature higher than that within the storage tank.

How should a by-pass valve be installed so as to avoid this trouble?

A by-pass valve should always be connected so as to carry all the by-passed fluid directly back to the storage tank. Unless a special outlet in the top of the tank has been provided to receive the by-passed

gages (12) and (13), for manual adjustment of the pressure. Fluid passing through valve (11) is returned to the supply tank through vapor return line (14). An explosion-proof push button (15) is also conveniently placed to stop and start the motor operating the pump.

liquid, it is in some cases satisfactory to connect the by-passed return into the vapor return line.

Does the continuous return of by-passed fluid to the storage tank eventually lessen the capacity of the pump to deliver?

No. On the contrary, when the by-passed fluid is returned to the storage tank, its added heat tends to maintain or even increase the temperature and consequent pressure within the storage tank, and so aids in the flow of liquid to the pump. If a butane or propane system can be so planned that the inlet liquid to the pump never gets higher in temperature than the liquid in the tank, most all chance of vapor lock will be avoided.

What other suggestions can be made relative to pump installation to eliminate the danger of vapor lock?

The pump should always be located as close beneath the storage tank as is possible; with large and direct connections. The line from storage tank to pump should if possible, have a continuous rise back to the storage tank, so as to avoid pocketing any vapor forming in the pump or inlet line while the pump is not in operation. In other words, there should be no sags or traps in the inlet line to hold gas or to prevent the ready return flow of any gas which might be formed by heating of the pump or intake line from the sun's rays or otherwise, as is frequently the case.

In the event the pump cannot be located to permit a ready return of vapors as described, or where pocketing is inevitable, as in the case of unloading railway tank cars, or where lines must be laid underground, how can this difficulty be otherwise overcome?

An auxiliary by-pass line with a hand control valve should be provided. This line should run from the pump outlet back to the tank car vapor line, or to the storage tank from which liquid is being withdrawn. Upon starting the pump, if this line is opened for a few minutes, liquid from the tank is readily circulated through the pump and pipe lines back to the tank. This operation will quickly free the entire circuit and the pump of any vapor which may have formed, and upon closing the by-pass hand valve, full discharge pressure will be developed. With such a layout used in pumping from tank cars, the syphon action if lost can be readily re-established by opening the valve for a short period of time.

Would such an hand operated by-pass valve be an aid in eliminating vapor lock in a small bottle filling plant?

Yes, if a conveniently located hand by-pass valve is incorporated in a bottle filling plant, as shown in the accompanying sketch, it will insure the complete evacuation of liquid vapor when starting the pump and will additionally provide an excellent means of controlling or varying the filling speed in accordance with the operator's ability to handle containers.

L. R. Jackson, Butane Dealer, Will Manage New Business

Lyle R. Jackson, until recently owner of the Butane Gas & Equipment Co., of Stockton, Calif., is now in charge of the Stove Oil Co.'s propane-butane gas department, situated at North Highway 99.

Insurance: Kinds and Costs

By D. C. COLLYER

Special Agent, O'Rourke and Royer, Inc., Denver, Colorado

In Two Parts—Part 2

WHEN a dealer in liquefied petroleum gases realizes the possibility of damage suits because of accidents to members of the public or to their property or to his employes, he becomes interested in what various types of liability insurance are available for him and wants to know their approximate costs.

D. C. COLLYER

It is quite difficult to quote rates that will apply to dealers generally. There is considerable variation on account of limits of liability, size and nature of operations and territory in which operations are located. Therefore, in this article we will deal mainly with rating procedure rather than with the rates, themselves.

The usual rates for a tank truck hauling butane and propane are very nearly the same as those for a truck used for hauling gasoline or kerosene. These vary according to territory, capacity of truck and distance of haul. Some companies include coverage for explosion hazard without extra charge. Others require an additional premium for it. Sometimes it is written in a separate policy.

LIABILITY—BODILY INJURY.*

Minimum Premium		$25
Limits:	Per person injured	$ 5,000
	Per accident	10,000

* Liability insurance rates on an LP-Gas bulk station and on operations away from premises.

Liability insurance rates on an LP-Gas bulk station and on operations away from the premises are the same as those for a bulk gasoline and oil distributor. Minimum premiums, that is the smallest amount for which a policy may be written, is usually $25 for bodily injury liability for limits of $5,000 per person injured and $10,000 per accident. For property damage liability on a bulk station, the usual minimum premium is $25 for limits of $1,000 per accident and $10,000 per policy year.

The basis used in determining premium is generally that of payroll. The rates are expressed as so much per $100 of payroll. The reason this is used is that the number of employes is a fairly good way of determining the size of a business. To take the amount of money

PROPERTY DAMAGE LIABILITY ON BULK STATION.*

Minimum Premium		$25
Limits:	Per accident	$ 1,000
	Per policy year	10,000

* Rates expressed as so much per $100 of payroll.

expended in wages as a basis of premium is easier than keeping track of average number of employes because of fluctuations in employment through seasonal layoffs, part time employes, and so forth.

Workmen's compensation and employers liability insurance premiums are also on a payroll basis. In fact, one reason for adopting it for public liability insurance was that employers were already familiar with it through workmen's compensation and the same payroll figures could be used for both. The rates on an LP-Gas dealer's operations for workmen's compensation and employers liability are generally those for a wholesale gasoline and oil dealer. In several states there are state insurance funds which write workmen's compensation insurance. Some of these have their own rating methods. Others follow those used by insurance companies. All, however, use payroll in figuring premiums.

Products liability insurance premiums are based on number of pounds of gas sold or amount to gross sales expressed in dollars. The minimum premium for bodily injury liability for a dealer who does not handle appliances is usually $50. For one who sells and services appliances, the minimum premium is $100. For products property damage insurance the minimum premium is $35 for a dealer who does not handle appliances and $100 for one who does.

Contractual liability coverage is rated at so much per contract. In other words, a copy of the contract is submitted to the insurance company and a rate is made in accordance with the amount of liability which the insured has assumed by signing the contract. The practice of inserting "hold harmless" clauses in leases and other contracts seems to be growing. In many cases the person signing the contract would hesitate before doing so if he knew that it would cost him an insurance premium to protect himself because of the liability assumed.

Owners and contractors protective liability for construction work performed for an owner by a contractor is rated in accordance with contract price for work done. Minimum premiums are $10 for bodily injury liability and $7.50 for property damage.

In the case of larger businesses there are experience rating plans which result in the insured with small losses paying a lower rate and premium than one who has had large losses. This is impractical for the small dealer for the reason that one catastrophe loss would absorb many years' premiums.

Most insurance companies have

PRODUCTS LIABILITY—BODILY INJURY.*

	Min. Prem.
Does not handle appliances	$ 50
Sells and services appliances	100

* Based on number of lbs. gas sold or amount of gross sales in dollars.

PRODUCTS PROPERTY DAMAGE	Min. Prem.
Does not handle appliances	$ 35
Does handle appliances	100

engineering and inspection departments. It is customary to have an inspection made before policies are written so that condition of equipment, type of personnel and effectiveness of supervision may be determined. If substandard conditions are found, recommendations for improvement are made or else the business is declined.

There is no system of credits for superior equipment, but we firmly believe that money intelligently spent for safety will come back to the policyholder in longer life of equipment, increased efficiency of employes and better customer relations. From the standpoint that the accident record of the industry will in the long run determine its insurance rates, the dealer who operates his business in as safe a manner as possible is making an important effort toward lower insurance rates for the industry in years to come.

Milton Starr Will Supervise Consumer Fuels Division

Appointment of Milton Starr as assistant vice chairman of the Office of Civilian Requirements was announced May 5 by J. A. Krug, chairman of the War Production Board.

Mr. Starr has been special assistant to William Y. Elliott, WPB vice chairman for OCR, since early in 1943.

In his new position Mr. Starr will have supervision of the Consumer Fuels Division, among other duties.

AGA Laboratories Return to Own Building

Spearheading the gas industry's large new research program, the American Gas Association Testing Laboratories in Cleveland completely reoccupied their former quarters on April 12, thus again centering all Cleveland operations in one place after having maintained separate temporary offices for six months after the Cleveland gas fire.

J. French Robinson, president of the American Gas Association, relaid the Laboratories' cornerstone just 17 years after the building had been erected under the chairmanship of a former East Ohio Gas Co. president, R. W. Gallagher, now Chairman of the Board of the Standard Oil Company of New Jersey. The Laboratories were originally established in 1925.

Of the Laboratories' staff of 27 at the time the building was erected in 1928, half are still active in the gas industry. Five, R. M. Conner, F. E. Vandaveer, K. H. Flint, F. A. Allen and F. R. Wright, are still members of the staff.

President Robinson laying cornerstone with George E. Whitwell, AGA Laboratories Managing Committee chairman, and R. M. Conner, Director, looking on.

New Association Formed For Butane-Propane Dealers

E. E. HADLICK

W. T. JOPLIN

JOHN L. LOCKE

P. A. ANDERSON

THE "American Butane-Propane Distributors Association" is the name of a new organization that has been formed to serve the increasing needs of the retail dealers and distributors of the liquefied petroleum gas industry.

Headed by Elwin E. Hadlick, a Minneapolis attorney, the association will extend its field of operation nation-wide, according to the articles of incorporation which were filed with Minnesota Secretary of State Mike Holm in St. Paul on May 18. Principal objective: "To promote the social, educational and scientific welfare of distributors of butane and propane gases."

Says Mr. Hadlick: "It is the purpose of the association to represent the interests of its members before national governmental agencies and state regulatory bodies, to develop scientific data concerning the industry, to educate the public in the multiple and varied uses of the products and their serviceability in relieving the drudgery of everyday work, and to develop and promote constant improvement in the services performed by the industry for consumers."

Membership will be made up of distributors of butane and propane gases to the consuming public. Provision is made for associate membership of producers, wholesale distributors, manufacturers and distributors of equipment and others interested in the industry in a manner other than distribution to retail dealers and consumers.

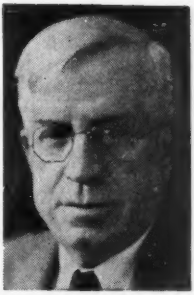
Because the new association will establish its activities throughout the United States, the six vice presidents elected represent a wide area from Washington to Maine. Vice presidents elected are:

C. M. Ambrose, Jr., Liquefied Gas Corp., Seattle, Wash.; W. T. Joplin, Butane Corp., Phoenix, Ariz.; F. N.

J. R. VERKAMP

H. H. HENLEY

E. M. ANDERSON



L. R. FORSYTHE

Mabee, Colorado Natural Gas & Fuel Co., Denver, Colo.; John L. Locke, Northwestern Blaugas Co., St. Paul, Minn.; T. A. Sacra, Roswell, N. M., and Peter A. Anderson, Utilities Distributors Inc., Portland, Maine.

Robert E. Zuppke, Natrogas Inc., Minneapolis, Minn., was named secretary and treasurer.

Sixteen directors, with the officers named, will have charge of the activities of the association. Representing 16 separate states, these are: Leland L. Harms, Harms Oil Co., Allison, Iowa; Si G. Darling, G. B. Darling & Sons, Pratt, Kan.; E. Martin Anderson, Utilities Distributors Inc., Portland, Maine; W. H. Wulf, Eastern Shore Gas Corp., Snow Hill, Md.; Earl C. St. Cyr, Cyr Bottle Gas Co., Marquette, Mich.; Henry H. Henley, Minngas Co., Tracy, Minn.; Kenneth Dickson, Uregas Service Inc., Moberly, Mo.; D. O. Mecklenberg, Montana Butane Gas Co., Billings, Mont.; L. R. Forsythe, Omaha Blaugas Co., Omaha, Neb.; Samuel Kapnek, Natural Gas Co. of New Jersey, Hammonton, N. J.; R. J. Coughlin, Westland Oil Co., Minot, N. D.; J. Richard Verkamp, Verkamp Corp., Cincinnati, Ohio; H. Merrill Winner, Rural Gas Co., Williamsport, Pa.; S. S. Margulie, Western Gas & Appliance Co., Rapid City, S. D.; V. J. Mueller, Wisconsin Bottle Gas Co., Medford, Wis., and Joseph Miller, Casper, Wyo.

Personnel Changes Occur at Gas Technology Institute

Comdr. Elmer Shaw Pettyjohn, U.S.N.R., was named director of the Institute of Gas Technology at Illinois Institute of Technology on April 17, succeeding John I. Yellott, who has held the post since September 1, 1943.

Until the time when Comdr. Pettyjohn's naval assignment is terminated, Associate Director L. J. Willien will be in charge.

Mr. Yellott will leave the Gas Institute on May 1 to become director of research with the Locomotive Development Committee of Baltimore, Md.

L. A. Mekler, combustion engineer and member of the engineering and development department for Universal Oil Products Co. since 1927, has assumed a new position as engineering consultant to the Institute.

The Institute of Gas Technology was founded at Illinois Institute of Technology in 1941 to provide a central research and educational service for the entire gas industry.

First Easing of Restrictions Benefits Liquefied Gas Men

REVOCATION of 61 War Production Board limitation orders and schedules have been announced by the agency from May 11 to May 18, inclusive, a recapitulation made May 19 by WPB shows.

The revocations affect upwards of 200 items for civilian use. Release of these items is made possible by the fact that in the main, only small amounts of steel are required in their manufacture.

In announcing these revocations, WPB officials said, consideration was given to the question of employment in towns where production cutbacks are anticipated, with consequent release of labor, and where it is also known that the items can be produced and employment maintained.

The revoked orders of direct or indirect interest to LP-Gas men and the items affected follow:

L-190 Production and distribution of scales, balances and weights.

L-91 Commercial laundry, dry cleaning and tailors' pressing equipment.

L-74 Domestic type oil burners.

L-75 Coal stokers with grate area of 36 sq. ft. or less.

L-173 Floor and wall furnaces.

L-187 Cast iron boilers.

L-182 Commercial cooking and food and plate warming equipment.

L-38 Industrial and commercial refrigerating and air conditioning machinery and equipment, evaporative coolers for civilian use in desert areas, mechanically refrigerated farm milk coolers and refrigerated display cases.

L-216 Certain industrial and commercial refrigerating and air-conditioning machinery and equipment.

L-111 Hand trucks and other handling equipment.

L-292 Food Processing Machinery, including dairy machinery and equipment, bakery machinery and equipment, and egg and poultry processing machinery and equipment.

L-39 Fire protective, signal and alarm equipment.

L-199 Range boilers and hot water storage tanks.

L-205 House trailers and expansible mobile houses.

L-101 Street cars, trolley coaches, integral buses and bus bodies.

L-53 Track-laying tractors (now covered by L-192).

L-53-b Repair parts for track-laying tractors (now covered by L-192).

M-126 Iron and steel conservation.

M-9-c, M-9-c-1, M-9-c-2 Copper.

M-9-c-4 Installation and sale of pipe tubing and building materials.

U-1 Various orders in this series affecting power, water, gas (not LP-Gas), and central steam heat.

It is believed by industry representatives in Washington that there will be a continuing relaxing of restrictions as the year passes.

Specifically, it is stated that with regard to the L-185, water heaters, and L-23C, gas cooking and heating stoves, he thinks the first mentioned will be revoked within the next 30 days or before the first of July and the latter order will not be revoked until some time during the 3rd quarter but, in the meantime, production quotas will be stepped-up considerably.

For instance, the production on gas ranges for the 2nd quarter will probably reach 200,000 units and should go to 250,000 units in the 3rd quarter.

Oven heat controls for the 2nd quarter will be about 150,000 to 175,000 units and in the 3rd quarter should reach 400,000 units giving a surplus for replenishing of inventories. The difficulty is going to be in scheduling the materials early in the 3rd quarter. With the cancellation of the Copper Order, M-9-c, the use of copper-dip tubes in automatic water heaters is now permitted.

LP-Gas Must Stay Restricted Till Japan Surrenders, Says Official

DEPUTY Petroleum Administrator Ralph K. Davies on May 7 called to the attention of dealers and consumers of liquefied petroleum gases that there has been no relaxation of the restrictions placed on the use of these gases.

Confusion arising from the revocation of the War Production Board order L-174, which provided machinery for emergency curtailment of manufactured or artificial gas during periods of shortage, led many persons to believe that similar action had been taken with regard to liquefied petroleum gases, Mr. Davies said.

Manufactured gas, which is also known as coal gas or city gas, Mr. Davies explained, should not be confused with any one of the liquefied petroleum gases, which are commonly known as "bottled gas" and are distributed to consumers under a variety of trade names.

The use of liquefied petroleum gases is controlled by WPB Order L-86. This order, which is administered by the Petroleum Administration for War, is still in force, Mr. Davies emphasized. It prohibits, subject to specific exceptions, the installation of liquefied petroleum gas equipment.

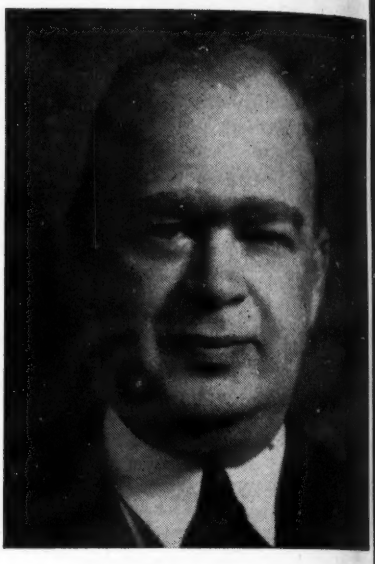
"The wartime restrictions placed on the use of liquefied petroleum gases must remain in force until Japan is defeated," Mr. Davies said. "Only thus will the liquefied petroleum gas industry be able to meet the urgent demands made upon it by the military forces."

One of these gases, butane, is an important ingredient of high-octane aviation gasoline, Mr. Davies explained. Another, propane, is used in huge quantities in war plants for the heat treatment of metals and for other special purposes.

James E. Pew Given Hanlon Award

THE Hanlon Award, highest honor in the natural gasoline industry and one of the ranking merit awards in the petroleum industry, was conferred May 2 on James E. Pew, Director, Natural Gas-Natural Gasoline Division, Petroleum Administration for War, Washington.

The ceremony took place at the annual meeting of the board of directors of the Natural Gasoline Association of America, in Dallas, Texas, a meeting held in lieu of the usual national convention. The convention was cancelled in accordance with the request of national war agencies.



JAS. E. PEW

Mr. Pew is the ninth recipient of the Hanlon Award which is conferred each year by the NGAA for outstanding meritorious service to the natural gasoline and condensate industries.

Presentation was made by James W. Vaiden, Skelly Oil Co., NGAA president, at the luncheon for the directors. The citation read in part: ". . . his untiring efforts in coordinating the wartime activities of the natural gasoline and condensate industries with those of the entire oil program; his continued and force-

THE HANLON AWARD

Recipients	*Year*
Richard C. Alden **Phillips Petroleum Co.**	**1937**
James W. Cowles **Shell Petroleum Corp.**	**1938**
George G. Oberfell **Phillips Petroleum Co.**	**1939**
George G. Brown **University of Michigan**	**1940**
Alois Kremser **Standard Oil Co. of Calif.**	**1941**
Edwin O. Bennett **Continental Oil Co.**	**1942**
Franklin P. Peterson **Mid-Continent Petroleum Corp.**	**1943**
Meinhart H. Kotzebue **Gasoline Plant Construction Corp.**	**1944**
James E. Pew **Director, Natural Gasoline Division, P A W**	**1945**

ful advocacy of a broader use of the products of the industries in the manufacture of critically needed war materials; and the effective manner in which he stimulated and directed the production and distribution of products for which there was the most pressing need, not only resulted in a great contribution to the total war effort but brought a new realization to the industries he represented of their own potentialities."

Mr. Pew is a native of Pittsburgh, Pa., where he received his elementary education. Later he attended Cornell university and Massachusetts Institute of Technology.

Early in 1942 he was summoned to Washington as a member of the Production Division of the Petroleum Administration for War. When this division was formed in June, 1942, Mr. Pew was made Chief of the Natural Gasoline Section, and in July, 1943, he became Assistant Director of the Division. In November, 1943, he was appointed Director of the Division, in which capacity he is now serving.

Motor Transport Equipment Program Increased for 1946

A motor transport equipment program calling for the construction of 1,063,000 trucks during 1946 has been announced by the Highway Transport Department of ODT.

According to ODT, the program has been presented to the War Production Board for consideration and action by the Requirements Committee of the Automotive Division.

In addition to trucks, the 1946 program calls for 50,000 truck-trailers, 250,000 truck and trailer bodies and 6,000 attachment third axels. The truck program includes 552,000 light, 444,000 medium, 55,000 light-heavy and 12,000 heavy-heavy trucks. The truck-trailer program includes 41,000 general freight and 9,000 special type truck-trailers.

This program, if approved by the WPB, should start providing some relief in the truck situation toward the latter part of the first quarter of 1946. In the meantime, the problem of keeping existing equipment in operation is still very much with us.

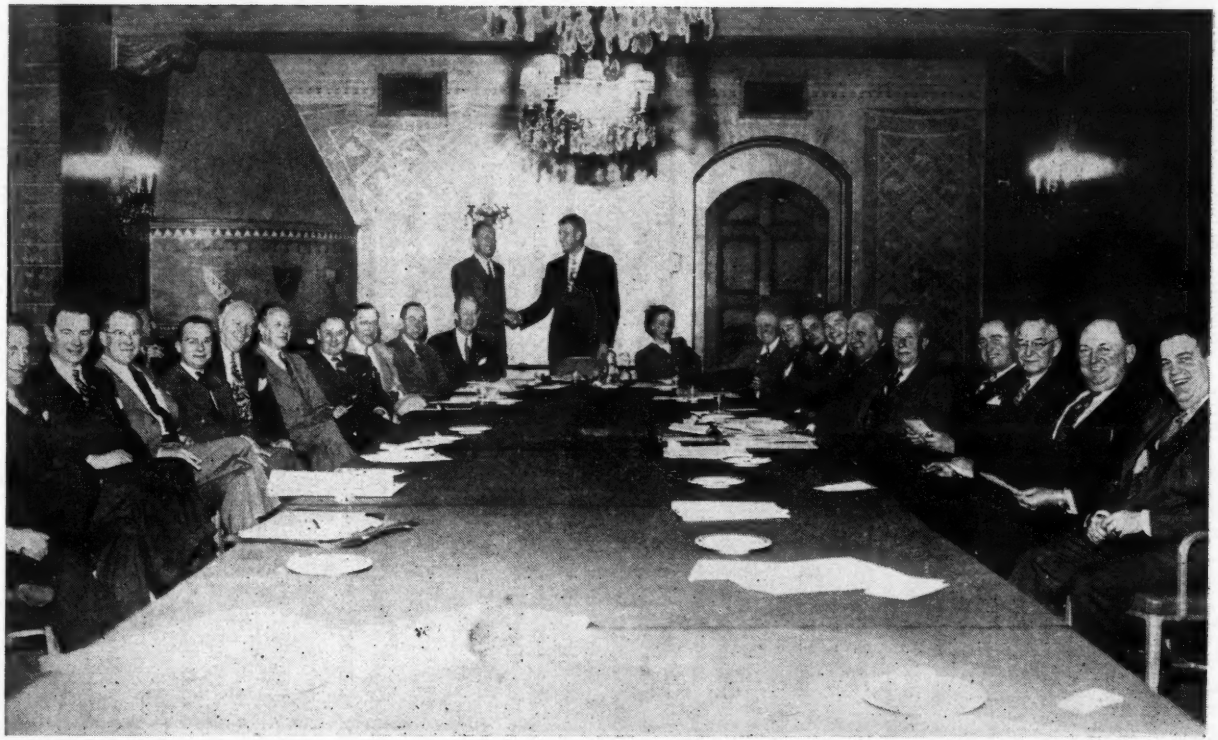
These figures were released before the surrender of Germany and this production program may now be stepped up.

Northwest Dealers Meet In Portland

A MEETING of the Northwest Division of the Pacific Coast Section, Liquefied Petroleum Gas Association, was held at the Multnomah hotel in Portland, Ore., on May 25 and 26. Liquefied petroleum gas dealers in that area gathered to organize their group, elect officers and discuss plans for increased activity in the future.

The meeting, which was the first held in that area in more than two years, was under the direction of F. F. Hampson, Yakima, Wash., sectional director, who also holds the post of vice chairman of the Pacific Coast Section, LPGA.

There were no speeches arranged for the two-day meeting. Instead, the gathering was thrown open to a general discussion of organization and plans for the future. It was a meeting to acquaint dealers with activities in their industry, to instill in them the importance of taking a more active part in national and sectional activities of the association, and to devise ways and means of increasing the membership in the Northwest.



FIRST MEETING OF THE NEW BOARD OF DIRECTORS. The 24 board members and a few visitors were present at the first meeting of the new board, at which Ernest Fannin of Phoenix, Ariz., was elected president to succeed Louis Abramson, Jr., of New Orleans. The picture was taken as Mr. Fannin (in background) took over the chair and is being congratulated by Mr. Abramson (left). Clockwise around the table are: Walter Miller, George W. Bach, Herman Merker, K. W. Rugh, Carl Sorby, G. L. Brennan, Lee H. Barker, D. D. Purrington, H. Emerson Thomas,, Walter F. Verkamp, Louis Abramson, Jr., President Ernest Fannin, Florence Jacob, H. K. Strickler, K. H. Koch, Selwyn Turner, Walter A. Naumer, F. B. Boice, Ellsworth L. Mills,

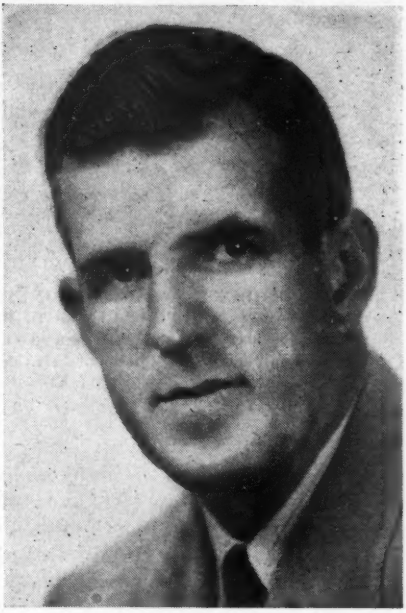
Full-Time Executive Planned By LPGA In Expansion Program

GROWING needs of the industry and promotion of LP-Gas in the postwar world has prompted the Liquefied Petroleum Gas Association, under the new leadership of Ernest Fannin, to inaugurate a program of expansion which includes the selection of a full-time executive secretary upon whom largely will be placed the responsibility for extension of Association activities and increased services, both to the membership and the industry as a whole.

This decision was reached at the first session of the new executive board in Chicago on April 24-25 and a special committee was appointed to seek the best available man for the office. The qualifications of suggested individuals for the new position will be brought before a meeting of the executive board as soon as possible.

Additional staff members for the headquarters office of the Association also are considered necessary for conducting the proposed increase of detail that is expected to occur.

The group named Ernest Fannin, of Fannin's Gas and Equipment Co., Phoenix, Ariz., as president to succeed Louis Abramson, Jr., who has served for the past two years. Harry K. Strickler, Protane Corp., Erie, Pa., was reelected first vice president, and Charles O. Russell, Thermogas Co., Inc., Des Moines, Iowa, was selected as second vice president.



ERNEST FANNIN

The board voted a resolution of thanks to Maj. Frank Fetherston, now on leave in active army service, and Florence Jacob, acting secretary, for their loyalty and the outstanding work done during the past few years under the trying conditions of war.

Committees which have served through the last fiscal year made

New Orleans. The picture was taken as Mr. Fannin (in background) took over the chair and is being congratulated by Mr. Abramson (left). Clockwise around the table are: Walter Miller, Herman Merker, K. W. Rugh, Carl Sorby, E. L. Brannan, Lee H. Barker, D. D. Purrington, H. Emerson Thomas, George W. Bach, Herman Merker, K. W. Rugh, Carl Sorby, Louis Abramson, Jr., President [illegible], Harry K. Strickler, K. H. Roach, Glenn Turner, Walter Fortenap, Louis Abramson, Jr., President [illegible], Florence Jacob, Secretary, F. B. Facer, Ellsworth L. Milne.

NEW PRESIDENT AND HIS CABINET. Left to right are Florence Jacob, New York, acting secretary of LPGA; Charles O. Russell, Thermogas Co., Des Moines, Ia., elected second vice president and chairman of the Midwest section; Ernest Fannin, of Fannin's Gas & Equipment Co., Phoenix, Ariz., newly elected president, and Harry K. Strickler of the Protane Corp., Erie, Pa., again named first vice president.

their reports and were thanked by board members for 1944 accomplishments. The group stated that 1944 was, from the standpoint of accomplishments, the most successful year of the Association. After adjournment, Mr. Fannin asked officers, sectional chairmen and several of the board members to assist in the selection of committees which will serve during the present year. The committee chairmen are:

Advisory Committee: H. K. Strickler, Erie, Pa.

Technical & Standards: Walter H. Hoagland, Marshalltown, Iowa, reappointed.

Publicity: E. Carl Sorby, Rockford, Ill., reappointed.

Legislative: Frank Boice, New York.

Finance: Walter A. Naumer, New York, reappointed.

Safety: Ellsworth L. Mills, Chicago, Ill.

Membership: D. D. Purrington, Emeryville, Calif.

Gas Specifications: G. L. Brennan, Tulsa, Okla., reappointed.

Transportation: H. Emerson Thomas, Westfield, N. J., reappointed.

Appliance: Mercer G. Farrar, New York, reappointed.

NBFU Pamphlet 58: Walter F. Verkamp, Cincinnati.

The important Advisory Committee is being expanded to five members and will continue to guide the operation of the Association. Appointed to the new committee in addition to Chairman Strickler, were H. Emerson Thomas, and the

three members of the 1944 committee, F. B. Boice, W. A. Naumer and E. L. Mills.

The board of directors and the chairmen and vice chairmen of the sectional groups were selected in a mail vote of the entire membership of the Association. (See BUTANE-PROPANE *News*, May issue, Page 23.) Seventeen members of the old board were re-elected and seven new members added. The new members are: Lee H. Barker, Wisconsin Rapids, Wis.; Ernest Fannin, Phoenix; F. F. Hampson, Yakima, Wash.; B. T. Harris, Little Rock, Ark.; Charles O. Russell, Des Moines, Iowa; H. Emerson Thomas, Westfield, N. J.; Walter F. Verkamp, Cincinnati.

The chairmen and vice chairmen of the four national sectional groups are:

Eastern Section: H. Emerson Thomas, Westfield, N. J., chairman; R. E. Forsberg, Suffern, N. Y., vice chairman.

Midwest Section: Charles O. Russell, Des Moines, Iowa, chairman; Lee H. Barker, Wisconsin Rapids, Wis., vice chairman.

Pacific Section: Ernest Fannin, Phoenix, Ariz., chairman; F. F. Hampson, Yakima, Wash., vice chairman.

Southern Section: Selwyn Turner, Mobile, Ala., chairman; B. T. Harris, Little Rock, Ark., vice chairman.

New members of the board of directors of LPGA gather 'round for a thirst quenching sip (water!) between sessions of the first 1945 board meeting. Left to right are: H. Emerson Thomas, Westfield, N. J.; F. F. Hampson, Yakima, Wash.; B. T. Harris, Little Rock, Ark.; Walter F. Verkamp, Cincinnati; Lee H. Barker, Wisconsin Rapids, Wis., and Charles O. Russell, Des Moines, Ia.

What Should a Salesman Be?

There Will be New Men to Train and Old Employes to Retrain After the War. But Now's the Time to Start.

By GEORGE H. SCHLATTER

Director of Sales and Service Training Department, American Stove Co., St. Louis

"SIMPLICITY, truth, directness, hard work, faith in your goods, faith in yourself and in your house, and not so much 'dog' are things that are needed now, as never before," wrote Elbert Hubbard during the days of the first World War.

G. H. SCHLATTER

As we approach postwar days now ahead of us, we find the same truths exist as back in 1916. In thinking of training our new salesmen and retraining our old employes, we are very apt to become hysterical as we grope for an educational program.

There is very little new to offer in the way of sales education. What is vitally necessary is clarification of our thinking. Let's get rid of the "dog" and teach "simplicity, truth, directness, hard work, faith in our goods, faith in our company and teach each employe to have faith in himself." Let's put Elbert Hubbard to work. Let us apply his principles and see what we can learn from his teachings.

The first step is to locate the type of salesman best fitted for the position. To do this we must analyze the job. What do we expect of this salesman, what will his duties be? Most sales managers answer that question by saying, "He must make sales." The truth is you will really expect much more than that.

As a starting point, let us use that heading as No. 1 on our outline, "He must make sales." Now dig deeper and see what he really must do to make sales. An outline of all his duties will soon show you how you must train him; besides, it will give you a greater appreciation of that man's job.

To make sales our salesman must:

1. Study all products he is expected to sell. He must know what each product will do for a prospect.

2. He must know the proper method of sales presentation of each product. This sales story must be easy for the prospect to understand and believe and it must be told in an interesting manner.

3. He must get acquainted with the prospect and gather information concerning him such as credit rat-

For Post-War Profits...

PLAN TO HANDLE THE QUALITY LINE

Grand GAS RANGES

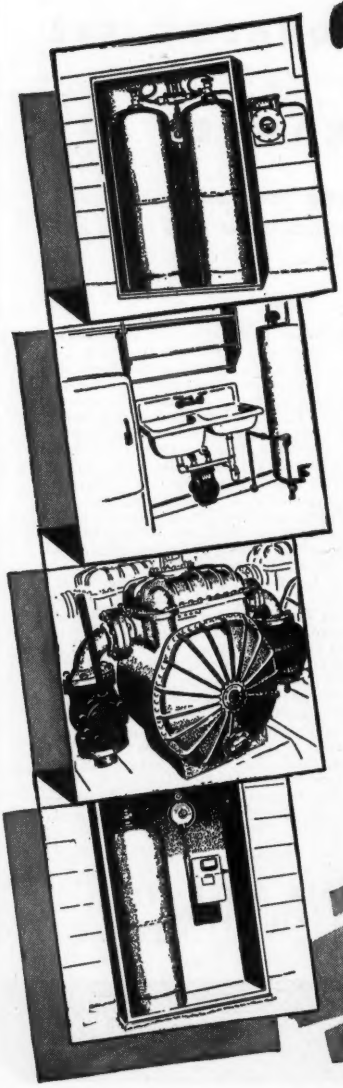
The Grand Distributor serving your territory is listed below. Contact him now and sign the Grand Dealer Franchise.

Albany, New York, Henzel-Powers, Inc.
Altoona, Pennsylvania, Electric Appliance Distrib.
Amarillo, Tex., Morrow-Thomas Hardware Co.
Atlanta, Georgia, The Yancey Company, Inc.
Baltimore, Maryland, Jos. M. Zamoiski Company
Bangor, Maine, Maine Industries Company
Billings, Montana, Billings Hardware Company
Binghamton, N. Y., Morris Distributing Co., Inc.
Birmingham, Ala., Alabama-Florida Distrib. Co.
Boston, Mass., Northeastern Distributors, Inc.
Buffalo, N. Y., Joseph Strauss Company, Inc.
Charleston, W. Va., Eskew, Smith & Cannon
Charlotte, N. C., McClain Distributing Company
Chicago, Illinois, Wakem & Whipple, Inc.
Cincinnati, Ohio, Griffith Distributing Corp.
Cleveland, O., Cleveland Distributing Company
Columbus, Ohio, American Sales Company
Dallas, Texas, Radio City Distributing Company
Dayton, Ohio, American Sales Company
Denver, Colo., Radio & Appliance Distrib'g Co.
Des Moines, Iowa, A. A. Schneiderhahn Company
Detroit, Michigan, Buhl Sons Company
Dodge City, Kan., Mullin Furniture & Appliance
El Paso, Texas, W. G. Walz Company
Erie, Pennsylvania, Young Brothers
Evansville, Indiana, The Switz Company
Everett, Washington, Washington Stove Works
Fort Wayne, Ind., The Wayne Hardware Company
Grand Rapids, Mich., J. A. White Distrib'g Co.
Hartford, Connecticut, Roskin Distributors, Inc.
Houston, Texas, Straus-Bodenheimer Company
Indianapolis, Ind., Griffith Distributing Corp.
Kansas City, Mo., Federal Distributing Company
Knoxville, Tennessee, C. M. McClung & Co., Inc.
Little Rock, Arkansas, Holcomb Gunn, Inc.
Los Angeles, California, Gough Industries, Inc.
Louisville, Kentucky, Kentworth Corporation
Memphis, Tennessee, McDonald Brothers
Middletown, New York, Roskin Brothers, Inc.
Milwaukee, Wisconsin, Radio Specialty Company
New Orleans, La., Radio Specialty Corporation
New York, N. Y., Times Appliance Company, Inc.
Norfolk, Virginia, Bowers Wholesale Corp.
Oklahoma City, Okla., Dulaney Distrib'g Company
Omaha, Nebraska, Major Appliance Company
Philadelphia, Pennsylvania, Judson C. Burns
Phoenix, Arizona, W. G. Walz Company
Pittsburgh, Pennsylvania, J. A. Williams Company
Portland, Oregon, Washington Stove Works
Providence, Rhode Island, I. Feldman Company
Rochester, N. Y., Beaucaire, Inc.
Sacramento, California, Dallman Supply Co.
Salt Lake City, Utah, Flint Distributing Company
San Antonio, Tex., Southern Equipment Company
San Francisco, Cal., Dalco Appliance—Div. of Dallman Supply Company
Shreveport, Louisiana, Interstate Electric Co.
Spokane, Washington, Washington Stove Works
St. Louis, Missouri, The Artophone Corporation
St. Paul, Minn., Motor Power Equipment Co.
Syracuse, N. Y., Morris Distributing Co., Inc.
Toledo, Ohio, Gerlinger Equipment Company
Washington, D. C., Columbia Wholesalers, Inc.
Wichita, Kansas, Federal Distributing Company
Wilkes-Barre, Pennsylvania, R. B. Wall Company
Williamson, W. Va., Persinger Supply Company

WHEN PEACE COMES
IT WILL BE Grand

Grand **GAS RANGES** • GRAND HOME APPLIANCE CO.
CLEVELAND, OHIO

No SQUARE pegs in ROUND holes!



IF YOU ARE to get the *full* advantages of metering, be sure the meters you use fit *your* particular service requirements.

. . . as assured by American Meter Company's complete line of LP-Gas meters and Reliance regulators...each bearing the industry's approval as to accuracy and performance.

In the merchandising of LP-Gas, the metered delivery is an invaluable sales aid and inspires immediate customer confidence . . . there are no doubts with a visible and authentic record of the quantity of fuel consumed.

American Meter Company brings to the LP-Gas field the same accuracy, dependability, and safety standards, that have distinguished its instruments in the older gas industries and the petroleum field.

Catalog LPG-4, describing these meters in full, will be mailed you on request.

AMERICAN METER COMPANY
INCORPORATED ESTABLISHED 1874
GENERAL OFFICES • 60 EAST 42ND STREET, NEW YORK 17, N.

ing, type and size of family, present methods used, etc.

4. After he has his information he must plan each interview in advance. Too many sales are lost because a salesman flounders before his prospect, all because of lack of knowledge.

5. He must know how to analyze the prospect's needs and how his merchandise and source will fill them.

6. He must know how to demonstrate the various products and service.

7. He must prepare truthful facts which can be used to combat competition. These facts must be ready at all times to overcome objections. He must know how to present facts and reasons.

8. He must understand all about his competitors' products and service and how to overcome all arguments presented by competition—this must be done without knocking or argument.

9. He must be taught how to appeal to the buying motives when presenting his sales story.

10. He must be capable of writing a sales contract that will clearly state all parts of the agreement—no "unwritten understanding" can be tolerated. At times write out a detailed proposition for his prospect.

11. He is your goodwill ambassador. He must be capable of building goodwill toward himself, his company and his product. He must be able to talk on topics not related to the sale of his product; he must like people and not fear approaching a stranger. He must appreciate and recognize the problems of the housewife.

12. He must know how to solicit orders. He must know how to ask for the order.

Salesmen here are actually "cooking with gas" to give them first hand knowledge of range performance.

Salesmen show their interest by gathering around range to acquire knowledge of best selling points.

13. At times he must make collections.

14. He must also assist your other salesmen. He must be cooperative with not only the entire sales group, but also with each department of the company.

What office duties are you going to expect him to perform? Will he be required to make reports? Will you ask him to keep records? What type of demonstration equipment will he be required to use and be responsible for? You must show him how to best use that equipment and how to properly care for it. You must assist him in getting information concerning latest prices, changes in product, etc., not only in your own lines but also those of your competitors.

You must determine well in advance how much service knowledge he should have and to what extent he should help in servicing appliances. In small communities salesmen also perform the duties of the service man.

Off hour duties consist of:

1. Each salesman must plan his work for the following day.

2. He must plan ahead so as to keep his "call backs" grouped. This will keep him from becoming a "skipper" (running all over the territory—wasting too much time on the road rather than talking to a prospect).

3. He must study not only his own business but current events, inspirational books and literature, etc.

4. He must gather localized sales or success stories about his fuel and his products.

5. He must seek facts in his territory that might have a bearing on

the sale of his product or the fuel.

6. He must take care of his health.

7. He must seek new ideas on sales presentation, how to gather additional prospects, use of products, etc.

8. He must attend sales and educational meetings.

As a goodwill agent:

1. He must boost his company.

2. He must adjust complaints of all descriptions.

3. He must render goodwill service not related to the sale of his product.

4. He must participate in social and religious affairs of the community.

5. He must keep appointments on time and never disappoint his prospect.

6. He must call back on all users, not only to keep them satisfied but also to build these users into sales assistants.

Gives Him Self-Assurance

This outline may be far from what you expect of your salesmen but it will serve as an illustration of how to outline the many duties of your representatives. Proper training means to give all the information necessary so he will never feel lost in the field and before his prospect because of lack of knowledge.

Most trainers have come to realize that long - drawn - out speeches will not bring the desired results. It is better to give a talk of not more than 20 minutes in length followed by a thorough discussion period.

Discussion always impresses a point on the class. Therefore, it is wise to make up a list of check questions which can be fired at the class. Let the men know in advance that questions will be asked. It isn't fair to spring a surprise examination, but by warning them in advance they will stay on the alert. Always give them the opportunity to ask the trainer questions. Care must be exercised to "hold them on the beam," as it is very easy to let the class wander completely away from the given subject.

Building the Sales Story

Salesmen as a class know very little about building their own sales stories. For this reason, in the past many companies decided to teach a canned sales talk.

Most sales divisions have discarded this method as it never fitted the personality of the man. By giving such a talk over and over again it soon got to be a parrot-like presentation. The newer thought seems to be to build a skeleton outline. A salesman then uses his own words, his own personality, his own inflections and his own ingenuity — in other words, it becomes his own story.

We must assist him in the construction of the outline, let him practice before the class, at home, or wherever he pleases. It is important that he hears his own voice utter the words before he ever faces a prospect.

Let us consider a few important points that should be emphasized to the beginner:

1. Most prospects dislike the thought of being sold. Therefore, a salesman must have a strong approach, he must gain the attention

before starting his selling process.

2. He must organize his talk in a progressive logical order. Each sales point must be in place and no single point should be missing.

3. Each point should be worded so as not to cause the prospect to doubt the statement. Unquestionable proof for each sales point should be in the possession of the salesman in case the prospect throws doubt into the conversation. Statements that can not be proven should never be used.

4. Salesmen should be cautioned never to make statements that seem exaggerated, no matter how true those statements are.

5. An interesting sales story is one wherein the prospect is permitted to take part. If the salesman does all the talking he becomes tiresome and soon loses the interest of the prospect. The prospect can be kept in the conversation by constantly qualifying the prospect.

6. Avoid talking in circles. The shortest distance between two points is a straight line, so a sales story should start at a given point and proceed to the point of signing the order without repeating any part of the sales story. Keep the story along a definite progression toward a definite end.

7. It is easy for a salesman to get side-tracked during the sales presentation. He must be taught to keep the prospect on the subject and not permit his conversation to ramble off on an unrelated topic.

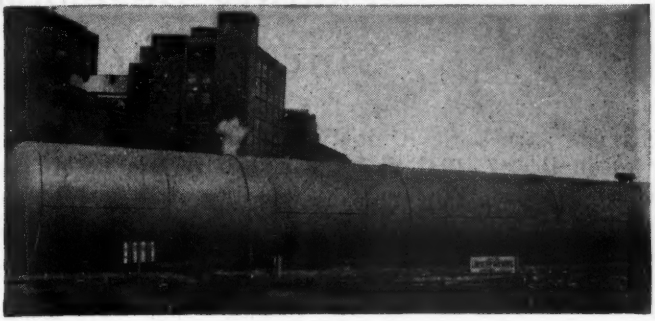
8. He must be taught to tell the whole story and yet ask for the order.

9. High pressure methods must never be used.

10. Teach your salesman to help the buyer buy. No one likes to be sold by a salesman. Everyone likes to feel that they did the buying. There is a difference.

By assisting in the preparation of the food before cooking, salesmen learn the details which enable them to talk intelligently to women prospects about cooking operations.

Leadership In LP-Gas Storage

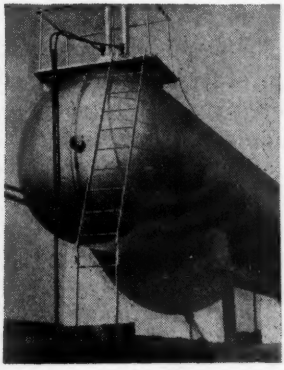


25,000 Gal. Propane Storage Tank
8' 4-13/16" O.D. x 76' 9-5/16" Long

Post-war markets with a resulting increase in competitive practices are approaching more closely every day. Now is the right time to equip your plant with adequate and economical storage facilities so you will be ready to ride the crest of the wave to LP-Gas profits.

Lancaster stands prepared to offer you the results of years of experience in design, fabrication and erection of complete bulk plants. This highly specialized knowledge is yours for the asking. You will be the winner in properly designed, trouble-free, durable LP-Gas storage.

Complete proposal drawings and estimates will be submitted to you gladly and without obligation. Send us your inquiries today for prompt attention.



15,000 Gal. Propane Storage Tank
8'0-1/16" I.D. x 50'5¼" Long

Bulk Tanks—Skid Tanks
Truck Tanks
for
Butane ★ Propane
Butane-Propane Mixtures

LANCASTER IRON WORKS INC.

LANCASTER, PENNA.

What The War Brought

Industry Developments Since Pearl Harbor

WHEN war struck the United States on Dec. 7, 1941, it hit the liquefied petroleum gas industry amidships!

Though not unfairly discriminated against by the frantic limitation orders which flowed in a stream out of Washington, dealers, distributors, producers and manufacturers everywhere were curtailed in their operations to an extent that, for a while, seemed to doom the industry almost to oblivion.

As the new rules became better understood; when it was found that no existing customers were going to be denied fuel or even curtailed in the amounts formerly provided; as new, war-essential installations were approved, the industry realized it was not too badly off, after all. Besides, the electric and oil industries were in the same boat.

A few who had cut prices on gas to pirate the customers of other dealers, sold themselves short with the price freeze. And those who had depended too largely upon profits from first sales of appliances and equipment instead of banking their futures on load-volume, had some worries.

Where the war performed probably the best service for the dealers lies in what was first considered a calamity—the restriction upon expansion. With nothing to market and the army and defence plants calling for manpower, sales organizations faded away, leaving proprietors with only their servicemen.

This had its compensations. Overhead was reduced to a minimum and management had a chance to take stock—not to inventory shelves and warehouses, but to analyze past business practices, to find leaks which were ignored in the flush of former prosperity, and to lay sounder plans for future development.

The war is not yet over. Limitation orders are still in effect. But there may soon be some slackening. And dealers have never been better fortified to renew their activities on a sound basis and to outpoint competition!

Here are many of the developments that have occurred in the liquefied petroleum gas industry during the war years to date:

Improved refinery processes have provided facilities for ten times the recovery of propane from the same oil production.

Trend from butane to propane, due to use of butane in war applications and other chemical uses,

L-P means LARGER PROFITS WITH WELBILT

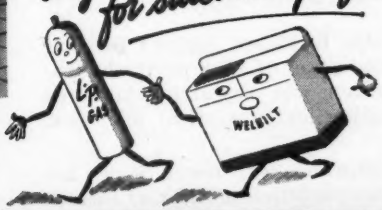
Yes . . . for increased profits feature WELBILT GAS RANGES along with your L-P Gas. They're made for each other!

Our present continued war work is still limiting the output of ranges. When restrictions are lifted, look for a line of WELBILT GAS RANGES which, more than ever before, will assume their rightful place as the leading choice of housewives for beauty and efficiency and of dealers for sales and profits.

WELBILT Equi-Thermal GAS RANGES

FRANCHISES AVAILABLE
To Select Dealers and Distributors. Inquiries are invited

a great team for sales and profits!



WELBILT STOVE COMPANY
INCORPORATED
MASPETH, LONG ISLAND, NEW YORK

World's Biggest Selling Popular Priced Ranges

and to the realization of the economic value of establishing high pressure storage to reduce cold weather failures and create more flexible operation.

The conversion of many installations, now using butane and butane-propane mixtures, to propane, requiring storage vessels designed for 200 psi. W.P.

Creation of new and expansion of old facilities for increased production, storage, transportation and utilization of liquefied petroleum gas.

The development of faster and more accurate methods of analyzing hydrocarbon mixtures.

Substitution for gas-oil and for increasing production capacities.

Improvements in methods of manufacturing liquefied petroleum gases.

New chemical applications.

Increased interest by appliance and equipment manufacturers in the LP-Gas field because of the larger potential market.

Greatly increased demand for and production of high purity hydrocarbons for research, standardization and analytical purposes.

Modification of regulations for transportation of LP-Gas including increase of tank car loading densities during winter months; the development and temporary approval of the use for transporting butane in tank cars having a vapor pressure not in excess of 65 psi. gage at 105°F.; and restriction on use of tank cars for short hauls of 200 miles or less, such shipments being handled by transport trucks.

Increased demand for high pressure tank cars and tank trucks, largely met by the building of new units. This may result in a surplus of transportation facilities immediately after the war, which rapid expansion will no doubt utilize.

Butane has proven to be the most important ingredient in the manufacture of synthetic rubber and 100-octane aviation fuel, resulting in diverting from former channels 2½ billion gallons in 1944, and other chemical uses in the future are expected to be almost beyond present comprehension.

Extensive research for improvement of products in the laboratories of fuel producers and manufacturers of equipment and appliances.

Improvement in design of equipment, such as regulators, meters, slip tube gages, valves, fittings, fill tubes, ranges, water heaters, trucks.

Acceptance by utilities companies of the value of LP-Gas for standby, for enrichment of low-Btu. manufactured gas, for its pioneering beyond the gas mains and for its ability to outpoint electricity in rural areas.

Increase in number of town plants.

Strong trend toward conversion of manufactured gas town plants to LP-Gas.

A recognition by the industry that it is better to build load at profitable rates than to depend upon first sales of equipment and appliances for main profit sources.

Expansion in industrial applications covering scores of old uses and the introduction of numerous new ones, due to the versatile qualities of the fuel and the shortages of other fuels in essential war plants.

Improvement of the financial positions of LP-Gas retail marketers.

Realization by the government, various states and the public of the economic importance of LP-Gas as a national industry, comparable to public utilities in the value of services rendered.

Limited supply of fuel and equipment has enabled dealers to select the most profitable type of customers for whom to install used equipment permitted under L-86.

Wider and more numerous applications of propane and butane to a host of commercial uses.

Success in contesting the railroads for lower freight rates in Southern states.

Increase in manufacturing capacity for valves and cylinders.

Weeding out of unprofitable customers by cancellation of contract and enforcement of minimum annual rate.

Domestic load increased by sales of load-building appliances as permitted under L-86.

Expansion and progressive development of the Liquefied Petroleum Gas Association.

Development of an effective LP-Gas publicity campaign, promoted by the LPGA.

Increased demand by war agencies for huge quantities of butane for aviation fuel, synthetic rubber and chemical uses assures abundant supply of butane for civilian purposes after slackening of war needs.

Manufacturers, better recognizing the potential in the LP-Gas market, are planning upon entering the field with better products and a wider range of items.

Government usage has familiarized millions of service men with the character and versatility of the fuel, which will create wider demand when they return home.

Gas-fired air-conditioning.

LP-Gas heaters for airplanes.

LP-Gas for cold starting of airplane engines in extremely low temperatures.

Development of spherical tanks for consumers, bulk plants and transport tank trucks.

Increased interest in and attention to Safety.

The conversion of diesel engines to LP-Gas.

Many large engine manufacturers

have under consideration the production of high compression engines suitable for LP-Gas without field conversion.

The Worthington Pump and Machinery Corp.'s new gas-oil engine that can be converted to burn one fuel or the other, or a combination of both, by one revolution of a single control wheel without change in load or speed.

The new Cooper-Bessemer gas-oil engine which can be simply and quickly adjusted to burn diesel fuel or natural and other gases, with a resultant fuel cost saving of 25%.

Demonstration of importance of demurrage charges against consumer to increase dealer gas load or to free semi-idle equipment.

Fuel price ceilings established by Government demonstrate the need of a higher basic price structure for butane to afford dealers adequate margin to render proper service.

Essentiality of large dealer and distributor storage capacities demonstrated by seasonal shortages of fuel.

The formation of a new industry association.

Many distributors have purchased transport tank trucks to haul fuel from refineries to bulk storage to avoid railway shipment delays.

Many housing projects all over the country, mostly Government sponsored, and Government army camps, adopted LP-Gas for cooking, water heating, refrigeration and space heating emphasizes the fuel's importance and flexibility.

Experimentation with plastics and other substitute materials for tubing.

Circuit Court reverses ruling of Alabama Public Service Commission that an LP-Gas company's distribution methods come under the public utility laws.

Restrictions in expansion because of government limitation orders.

Alabama Service Commission places operating companies under its jurisdiction in certain housing projects to detriment of established marketing procedures. (Later reversed—See above.)

Trend by states to tax fuel and operations, and to enact other regulations for control of the industry.

The establishment by the OPA of maximum price regulations on LP-Gas, equipment, appliances and services.

One state enacts regulation compelling dealers who newly engage in LP-Gas business to install 15,000-gal. minimum capacity storage to better ensure customer service during possible fuel shortages that might follow periods of limited transportation.

LIQUID GAS EQUIPMENT CORP.

MAIN OFFICE:

1355 Market Street San Francisco 3, Calif.

Offers A New Service

to the Liquefied Petroleum Gas Industry

• • •

Liquid Gas Equipment Corp. inaugurates a new idea for the Liquefied Petroleum Gas Industry with the opening of their appliance-equipment distribution service. This organization will offer to the industry a type of service that has been a long established fact in many older industries.

Diversified stocks of appliance and equipment will make possible fast, efficient service, by bringing together AT ONE SOURCE the many products that every dealer must have for the successful operation of his business.

This service will mean—The saving of time and money for dealers—The opportunity of obtaining the finest quality products—The choice of many makes and many models without the necessity of large inventory stocks and tied-up capital—No shipping delays. The knowledge of men with many years' experience in the Liquefied Petroleum Gas Industry will be available.

• • •

Stocks of certain items are immediately available. Complete lines will be in stock as production permits. We solicit your inquiries. Your interest will be appreciated.

J. H. Dunn Elected President, NGAA

J. H. DUNN, vice president and general manager, Shamrock Oil & Gas Corp., Amarillo, Texas, was elected to the presidency of the Natural Gasoline Association of America at the membership meeting held in Dallas, May 2. This meeting was held in lieu of the usual national convention which was cancelled in accordance with requests of national war agencies. Mr. Dunn succeeds J. W. Vaiden, Skelly Oil Co., Tulsa.

J. H. DUNN

Mr. Dunn is a native of Texas where he was born in Dallas county. He obtained his B.S. degree in mechanical engineering from Texas A & M College. Upon graduation in 1924 he was associated with the Continental Gin Co. for nearly two years before becoming an orifice meter inspector for the Lone Star Gas Co. He was serving as chief production engineer for that company in 1939 when he joined the organization of the Shamrock Oil & Gas Corp., assuming the position which he now holds. Mr. Dunn is a vice president of the Independent Natural Gas Association of America, an association which he helped to organize. He has been active in various petroleum war agencies particularly that of the PAW Industry Committee in District 2.

Other officers elected at this meeting include the following vice presidents: Paul M. Raigorodsky, Glen Rose Gasoline Co., Tulsa, Okla.; H. A. Ells, Cities Service Oil Co., Bartlesville, Okla., and John B. Atkins, The Parade Co., Shreveport, La. Vice president representing the High Pressure Gas Division is C. R. Williams, Chicago Corp., Corpus Christi, Texas.

Directorate for Ensuing Year

New directors elected for a two year term are: J. S. Abercrombie Co.; Barnsdall Oil Co.; Continental Oil Co.; Cities Service Oil Co.; Hagy Harrington & Marsh; Lone Star Producing Co.; Owens, Libbey-Owens Gas Department; The Parade Co.; Shamrock Oil & Gas Corp.; Shell Oil Co., Inc.; Union Oil Co. of California; and Virginian Gasoline & Oil Co.

These directors, together with the following who were elected for a two year term in 1944, will comprise the directorate for the ensuing fiscal year: The Carter Oil Co.; Coltexo Corp.; Cotton Valley Operators Committee; The Chicago Corp.; Glen Rose Gasoline Co.; Hanlon - Buchanan, Inc.; Kansas Power & Light Co.; Phillips Petroleum Co.; Sabine Valley Gasoline Co.; Skelly Oil Co.; Standard Oil Co. of California; United Pipe Line Co., and Warren Petroleum Corp.

QUIZ — Regulating Pressure

• *This department is a monthly feature to stimulate thought and to give operators basic industry facts. Clip out for your notebook or file in a standard, 3-ring, loose-leaf binder. Sources of information: The Bottled Gas Manual, Handbook Butane-Propane Gases.*

Questions	Answers
1 **What is an LP-Gas regulator?**	An LP-Gas regulator is an automatic pressure reducing valve.
2 **What is the function of the regulator?**	Pressure in the LP-Gas container is much greater than the operating pressure required to burn the gas in appliances, and the regulator reduces the gas pressure from tank pressure to appliance pressure.
3 **How is the pressure controlled by the regulator?**	The high pressure gas from the tank passes through an orifice which has a valve held open by a spring. When the gas passes through to the outlet side, it fills the body and lower side of the diaphragm case. The pressure of this gas operates the diaphragm which tends to close the valve against the spring pressure.
4 **Can a system be operated safely and economically without a regulator?**	No. It is necessary to carry a closely regulated pressure at the burners for economical and satisfactory performance. The tank pressure varies and is too high for domestic appliance burner operation.

5

What is the generally accepted pressure adjustment on outlet side of LP-Gas regulators for household use?

11 inches water column, which equals 6.36 oz. per sq. in.

6

How is the outlet pressure adjustment made?

The outlet pressure is adjusted by increasing or decreasing the force exerted by the spring operating against the diaphragm. To increase the outlet pressure, additional force is applied by the spring by tightening up the adjusting screw. This requires more pressure on the outlet gas to close the valve on the orifice.

7

For what purpose is the safety valve on the regulator?

The safety valve, which is usually a spring loaded valve, is provided to relieve the pressure on the downstream side in case the regulator valve does not close. This prevents high pressure gas from entering the appliance burners.

8

What is the air vent and what is it for?

The air vent is an opening in the diaphragm case to allow atmospheric pressure to act against the upper side of the diaphragm. If this hole becomes plugged, the regulator will not function properly.

9

What determines the capacity of the regulator?

The capacity of the regulator is determined by the orifice size and the valve linkage. Capacity within working range is specified by the regulator manufacturers.

10

What causes regulators to "freeze up"?

When pressure is reduced gas expands. Expansion of gas requires heat. If sufficient heat cannot get to the expanding gas its temperature is reduced. If the temperature is reduced sufficiently, moisture or hydrates in the gas solidify, causing "freeze up."

SUBJECTS TO BE COVERED IN FORTHCOMING ISSUES:

● Regulator Manifolds ● How to Buy and Install Equipment ● Pipe Lines ● Testing for Leaks, Burner Adjustment ● Thermostats, Pilots and Pilot Controls ● Burner Design and Application ● Appliance Conversions.

You Can Always

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for

PERFECT PERFORMANCE

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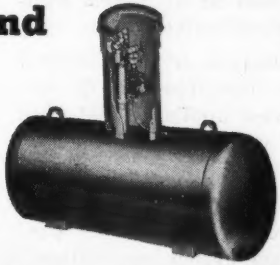

GREATER SAFETY

GAS EQUIPMENT

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Safety

Ways to Help Customers Prevent Gas Utilization Accidents

THE following general causes of customer gas accidents should be discussed and fully understood by all employes so that they constantly can be on the alert to educate users on observing "safety rules": (Use actual demonstrations or charts to illustrate all possible operations.)

1. Failure to observe NBFU Pamphlet No. 58 five-foot rule in placing of equipment at installations, and failure to install proper shut-off valve in the gas piping, so that this valve cuts off gas to all appliances used, and is in an accessible and workable position at all times. Failure to tag shut-off valve.

2. The authorized or unauthorized connecting of non-approved or improperly adapted appliances is often the source of customer accidents.

3. Connecting and locating appliances in drafty places or in positions where the opening of doors or windows may affect burner combustion.

4. The improper adjustment of appliances due to carelessness or the tampering with adjustments by customers who are not in position to correctly adjust appliances.

5. Defective controls, piping, fittings, etc., must be guarded against for they cause many accidents. Tubes or pipes must be properly plugged when appliances are disconnected.

6. The chief operator of customer's appliances must be thoroughly instructed as to safe operation of each appliance and must be made responsible for instructing new help, other members of family, visitors or any other occasional operator of Philgas appliances.

7. Customers should all be instructed in observance of rules for safe, efficient operation of Philgas equipment and Philgas AGA approved appliances and sold on the idea that carelessness leads to high operating costs. (Instruct by actual demonstration, and make sure by having customer demonstrate to you.)

8. Customers should be instructed

IT IS AN INcreasing practice among progressive companies to hold safety meetings in their own organizations. The Philgas Division of the Phillips Petroleum Co. is one such company. It has a well planned program, one that can be, and should be, followed as closely as possible by all dealers and distributors.

F. F. CAMPBELL

This Philgas safety program has been made available to the LP-Gas industry through F. F. Campbell, manager of the retail division, and will appear, chapter by chapter, in BUTANE-PROPANE *News*.—Editor.

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concerning gas odor and proper procedure in reporting gas leaks or other hazardous conditions to Company immediately if in direct service districts, and to dealers if in self-service territory.

9. Field service men or dealers should always check for proper burner, pilot and automatic control adjustments at every opportunity to do so when visiting users' locations. Users are entitled to safe, efficient operation of all appliances that we have placed on our line.

10. On out-of-gas calls, care must be taken to see that all pilots and gas valves are shut off prior to placing gas in line and storage containers. Make sure lines are gas tight by testing with manometer, and then make sure all pilots and automatic appliances are properly relighted and in operating condition. When lines are broken or altered, make sure that all air is purged prior to final adjustments. Gas must never be turned on when customers are not home and all appliances are not accessible.

11. Lack of proper information over the phone or on work-order reports may contribute to gas accidents. Make sure that all installation reports, "installation checks" and "water heater check" reports are correctly and completely filled out for they all assist and help promote "Safety."

12. All employes must be instructed on proper procedure to follow when customer gas accidents occur. Discuss procedure and prompt reporting.

13. Have employes demonstrate the proper adjustment of safety cut-offs on our different type water heaters and causes and corrections of their becoming inoperative.

14. Demonstrate the proper sequence of checking a customer's installation and final adjustment of range, Servel, and water heater.

15. Demonstrate the full procedure to follow in instructing a new user how to correctly operate a Philgas range, Servel and automatic water heater. Make sure that the following precautions are made clear:

(a) In lighting ovens, have heat control on broiling position; place match at lighter tube prior to turning gas on. In case of noticeable delay in ignition, close gas valve; air out burner compartment and start over. Make sure oven burner has fully ignited prior to assuming it is OK. Make sure that no steel wool or rags have been placed on oven flues.

In case oven flame is extinguished and valve remains on, keep all flames away and make sure that room and oven compartments are fully aired out prior to relighting. The same precautions must be observed with broiler and top burners.

To conclude this meeting, review discussable customer accidents of 1943 and 1944, bringing out preventive measures that should eliminate future similar ones.

Have all employes pledge observance of all "Safety Rules" and elimination of all possible customer gas accidents. Teach all customers to "Never Gamble with Safety."

R. A. Youngblood Heads Gasoline Rationing Board

Richard A. Youngblood has been appointed chief of the Gasoline Rationing Branch of the OPA. He succeeds Quentin W. Regestein, who has returned to the Socony-Vacuum Oil Co. as division manager in charge of the New York City division.

FOR EFFICIENT DEPENDABLE CARBURETIO

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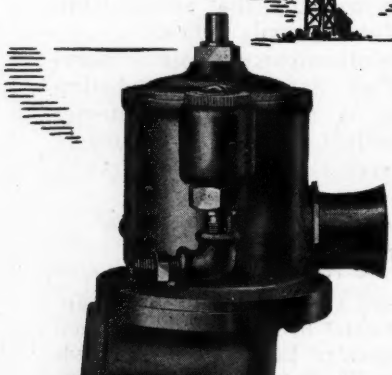

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POWER

Converted Diesel Truck Undergoes Test

By PAUL LADY

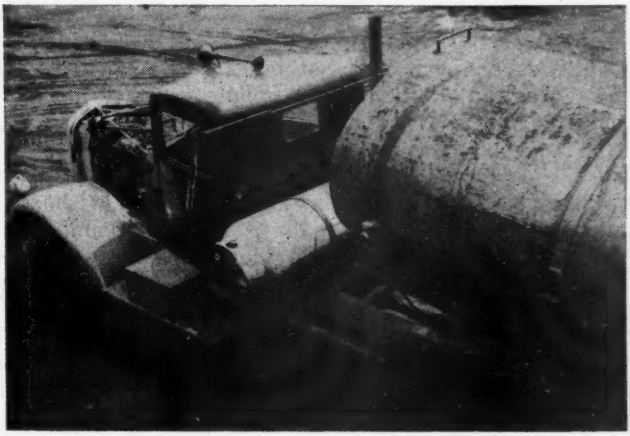
PROOF that the conversion of a diesel engine to run on liquefied petroleum gas is a practical operation was conclusively shown in Los Angeles recently when a Model H Cummins diesel truck engine was changed over to use propane for fuel. The unit is owned by the Weyler Transportation Co., 1938 East Vernon Ave., Los Angeles.

At the end of 45 days operation, with nearly 8000 miles road travel, and pulling a 20-ton net load, the performance was judged excellent. From the power standpoint, it excelled diesel. This is the opinion of both the owner and driver of the truck.

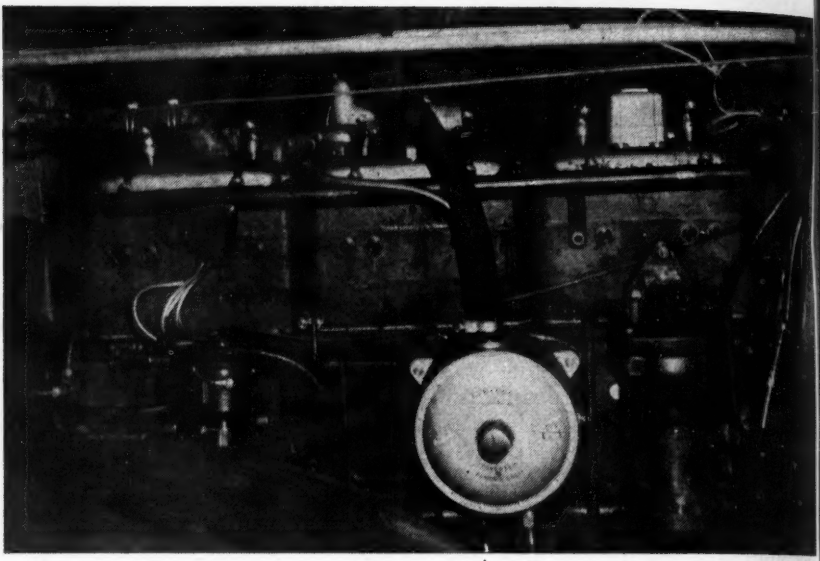
The work of converting the engine was done by mechanics of the California Truck and Engineering Sales Co. Before any conversion equipment was installed the engine was completely rebuilt and all worn parts replaced.

The conversion equipment was manufactured by Sammons and Sons, 10,704 S. Alameda, Lynwood, Calif. This equipment replaced many of the standard diesel parts on the engine and, when installed, completely converted it from diesel operation to a regulation propane engine.

Most of the travel time for the first six weeks of driving was done in local areas. A close check of fuel used showed that the truck was



This Model H Cummins diesel, converted to operate on propane, is now hauling a net pay load of 20 tons. In 45 days of operation it was found that the engine produced more horsepower, ran cooler and much smoother than formerly. Two more diesels of the same model are being converted at once by the owner.



Viewing the converted diesel from the left side of the engine, one can see the large converter used for the vaporization of fuel. The 1½-inch hose, running over the top of the motor carries vapor to carburetor mounted on the right side of engine. The tops of the spark plug adaptors can be seen protruding from each cylinder. The spark plugs are held in place by adapters which extend about six inches into head. To the left of the converter may be seen distributor with wires extending up to spark plug.

getting about 3½ miles to the gallon. The same truck operating on diesel got about 4 miles to the gallon for this type of driving.

Oil was changed at 5000 miles and it was found still to be in good condition. It was not diluted and still had good viscosity. The oil in the diesel trucks owned by this company is changed every 1000 miles. The truck has not gone far enough on propane to give a true picture as to the amount of oil which will have to be added. It has been found, however, that oil consumption is no more than that used on a gasoline engine and so oil changes will come much less often than with a diesel-burning engine.

Power from the converted engine is increased considerably. The driver reports that he can operate his truck on propane at from one-half to one gear higher at all times. Dynamometer tests on the engine showed 165 hp. with all accessories; 205 hp. without. It is reported that the Cummins diesel registers 125-130 hp. with accessories.

The compression ratio was changed from 14-1 to 8½-1. This will of course mean that the strain and wear on working parts will be much less and the life of the motor increased immeasurably. The speed

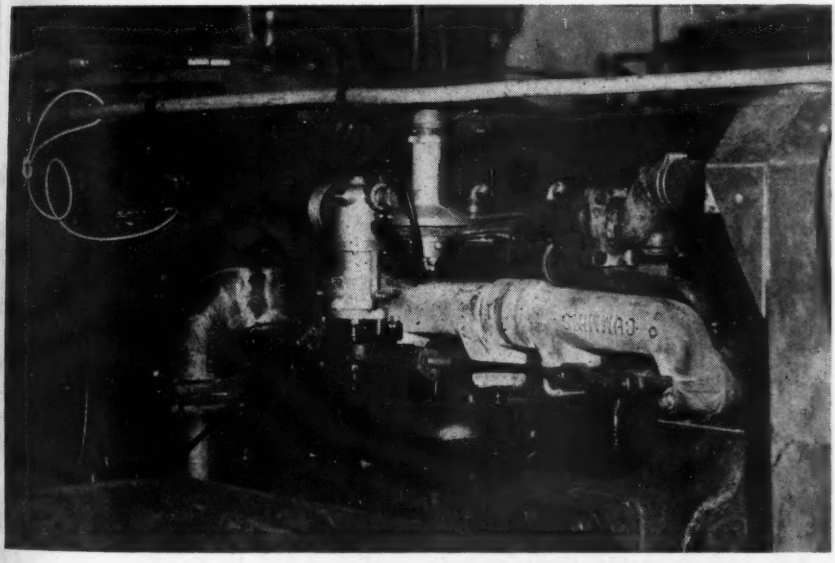
of the motor is set at 1800 RPM.

The driver of the truck, an experienced operator, who has driven it as a diesel over two and one-half years, has much to say in favor of propane. He reports that besides a big increase in power and pickup, the truck runs much smoother on propane, is cooler, and there is considerably less vibration.

Sufficient time has not elapsed since the truck was changed over to give definite figures on the savings resulting from operation on propane. However, there is no doubt but what there will be a large saving in overall operational costs. The great economy will come in less oil used and lower maintainance and repair. Fuel costs may be slightly higher in gallons used but it must be remembered that the engine is producing more power with propane.

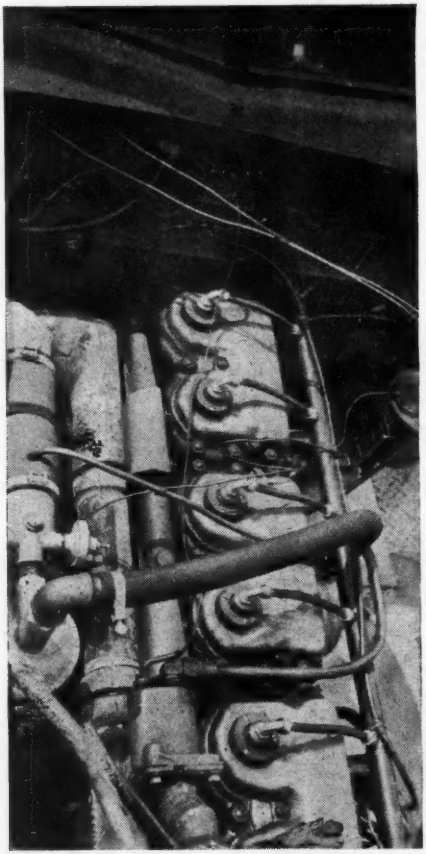
Savings from down-time for overhaul that occurred under diesel operation, as well as cost of overhaul, will undoubtedly be very large. Operating as a diesel, this same truck was in the shop every 75,000 miles for a "ring job." This included new rings, valve grind, and general cleanup and adjustment. Such a job costs between $125 and $150. A "major overhaul" formerly came at every 150,000 to 200,000 miles. The average cost for this work was around $1500.

On this basis, the saving in repair costs will more than justify the conversion. It is safe to assume



Right side of engine showing atmospheric regulator and lock-off which is mounted on carburetor. Hose extending from converter on opposite side of engine connects to top of lock-off. Carburetor is mounted on new intake manifold—a part of new equipment used in conversion.

that the converted diesel will not require an overhaul any oftener than a gasoline engine converted to operate on propane. Using statistics obtained from owners of fleets operating converted gasoline trucks, it is found that some trucks go as far as 300,000 miles before a major overhaul is needed.



Spark plug adapters may be seen protruding from top of cylinder heads. Adapter encases spark plug and holds it in place in cylinder head. Plug is attached to tube which extends into cylinder six inches.

Judging by this, the converted diesel will go twice as far on propane as diesel fuel before general overhaul is needed. The cost, of course, will be much less at that time as the expensive diesel parts will not have to be replaced and the wear on the motor will be minor in comparison.

Performance of the converted diesel has been sufficiently satisfactory, from the viewpoint of owner-operator Dave Weyler, so that conversions of two other diesels will be made as quickly as possible. The motor of one is now in the process of being rebuilt and it is expected that all three of his diesels will be operating on propane within a few weeks.

What "Kit" Contains

The "kit" of conversion equipment developed by Sammons and Sons is complete and takes care of all the necessary changes that have to be made in the engine. It comprises an ignition system—spark plugs, adapters; distributor and wiring; governor control system; manifolds — intake and exhaust; pistons; and other miscellaneous parts such as brackets, spacers, etc. Additional new parts needed consist of the regulation propane equipment, including converter and carburetor, fuel tanks, tubing, etc.

Cost of equipment and installation ranges between $1200 and $1500. A variation in size of fuel tanks, type of carburetion equipment and incidentals of course will govern the final cost.

An additional cost at time of conversion may come from rebuilding of the motor. This will un-

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doubtedly be true in most cases as a conversion will not usually be considered until a diesel motor is about ready for a major overhaul. The cost of this operation would depend entirely upon the condition of the motor.

Salvage Value Is High

A factor to offset this expense is found in the trade-in value of salvaged diesel parts. Much of the most expensive diesel equipment such as pump, injectors, rockers and manifolds are discarded when the conversion is made. From these pieces the owner immediately realizes the trade-in value, which amounts to from $450 to $500. He also escapes the costly item of repair or replacement on these parts. The money realized from the sale of this equipment will more than pay for any work done to repair the motor.

The carburetion equipment used must be of an ample capacity to serve an engine up to 200 hp. The unit used on this conversion was manufactured by the Century Carburetor Co., with factory headquarters in Lynwood, Calif. The converter (or heat exhanger) used was the new Model K recently developed by this company. It is capable of handling engines up to 500 hp.

The use of butane or propane as a motor fuel for diesels is not new. The first successful diesel conversion was made in 1939 on a Model L Cummins in Texas. (For further information on these installations see the April issue of BUTANE-PROPANE *News*.) Since that time a number of others have been converted with great success.

Test on the Model H Cummins have been going on for over two years but due to wartime restrictions on critical materials, the conversion of truck engines has been delayed. Although conversion of the present Model H Cummins is the first successful one on diesel truck engines to be accomplished in the Los Angeles area, there have been several engines converted in the past in other sections of the country with considerable success. No doubt, as the practicability of diesel conversion is learned and recognized, there will be many such changeovers made.

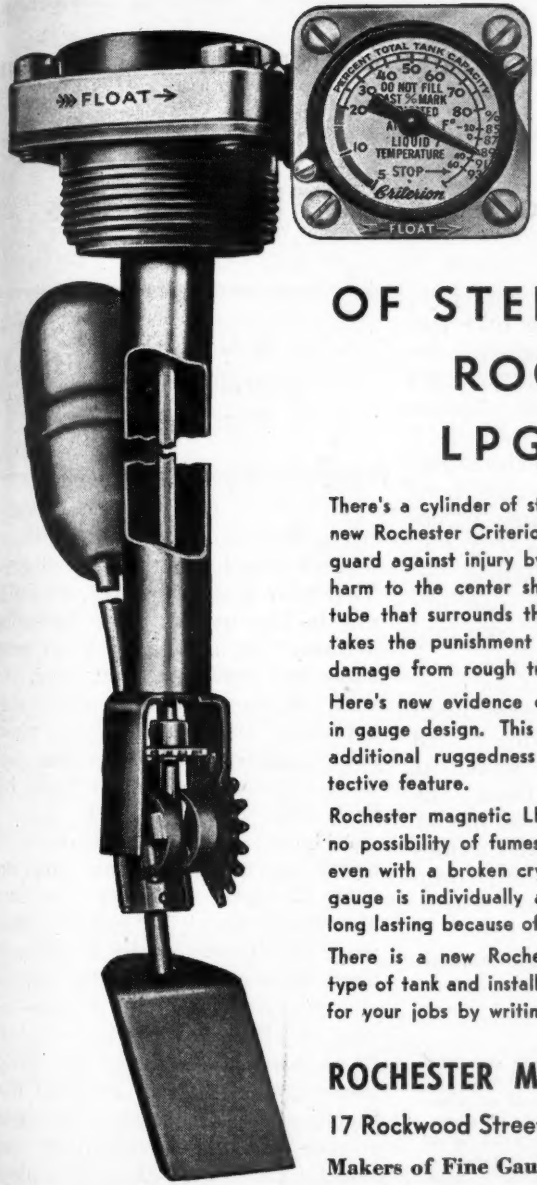
Gasoline and Diesel Fuel Can Now Be Made from Gas

Through use of a new engineering development of the Fischer-Tropsch process, The M. W. Kellogg Co., petroleum and chemical engineers of Jersey City, and New York, can now produce gasoline with a clear octane number of 75 motor (83 research) from natural gas for about 5c per gal., according to a company announcement.

This brings gasoline synthesis from natural gas within the range of successful commercial operation by the American refining industry. The process is equally adaptable to the economical production of high cetane Diesel oil.

Designs for synthesis plants as developed by Kellogg now utilize natural gas.

However, the basic constituents can be obtained from low grade coal or other low cost, high carbon content materials when and if the supply of natural gas is no longer adequate.



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There's a cylinder of steel protecting the center shaft on th new Rochester Criterion LPG Gauges. Here is a sturdy safe guard against injury by rough handling in transit and agains harm to the center shaft during installation. The rigid stee tube that surrounds the "works" on these new LPG Gauge takes the punishment and shields the center shaft agains damage from rough treatment.

Here's new evidence of Rochester Manufacturing leadershi in gauge design. This sturdy leakproof LPG Gauge is give additional ruggedness and serviceability by this new pro tective feature.

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Shoe Factories Offer New Profits

By C. C. TURNER
Special Representative,
Butane-Propane News

ONE hundred and eighty-six thousand workers in 1071 factories scattered throughout the United States produced 461,573,189 pairs of boots, shoes and slippers in 1943!

In that year the American people spent $1,898,100,000 for footwear, and the shoe manufacturers paid out $273,808,500 in wages to factory workers, alone. These figures, except for the total expenditures, exclude shoes and boots constructed of fabrics or rubber.

The year 1943 was not an especially good one for the shoe business. The army and navy had dipped heavily into the ranks of the workers. Many of those who were left were attracted by higher wages to the war industries. Hides and other materials which go into the making of shoes were scarce. Rationing was in effect.

In 1941 an all-time high was hit in producing 498,381,625 pairs of leather shoes, boots, and slippers. That year there were 216,400 workers in the leather shoe factories. We wore out and threw away more shoes per capita in that year, yet, with all our groaning about shoe rationing and our worrying about shoe stamps, it is surprising how little our consumption of shoes has been cut. (See Table 1.)

I have compiled this table in order to impress upon you one fact. *The shoe industry is a very stable one.* In either peace or war, man, the tenderfoot of all animals, must be shod. Even in the depression years, employment and production of shoes fell off but slightly. It is also an industry in which there are but slight seasonal fluctuations. The changing of styles or the taking of inventory may cause a short shut-down of a plant, but the reputable manufacturers of well known brands either anti-

A SHOE FACTORY of moderate size will use from 300 to 600 lbs. of LP-Gas per week. This makes a potential load of from 16,000,000 to 32,000,000 lbs. of LP-Gases per year at a fair competitive price of 6 cents per lb. In gallons of butane or butane-propane mixtures, here is a load of from 3,312,927 to 6,625,854 gals. at 29.1 cents per gal., or from $1,000,000 to $2,000,000 worth of fuel business.

cipate or create styles and keep up a steady production throughout the year.

Why should I recite all of these facts? It is because, whether you known it or not, LP-Gas already plays a very important part in the manufacture of shoes, and it can play a much larger part. It plays an important part at the bedlaster and pull-over machines, and is actually supplanting electricity in these operations because of its superior qualities which I shall later mention.

It is used on embossing machines. LP-Gas torches are used to singe off threads or remove the exposed fuzz where the leather has been cut or skived. In at least one instance it has been used to correct an error in the cutting room which threatened the loss of thousands of dollars' worth of stock which had already been cut and appeared to be useless. No manufacturing business has any greater need of our product.

This matter of supplanting electricity isn't any pipe dream either. As usual, the electric boys caught us asleep at the switch and made many elaborate and costly installations in the shoe factories. Many a shoe manufacturer utters an audible groan when he passes a pile of electric junk stacked up in a corner and thinks of what it has cost him. I've earned a good many of my white hairs by staying up all night with a crew of men, just in order to rip out electric equipment, convert it to gas operation and have an entire factory ready to operate

TABLE 1.

DATA PERTAINING TO THE MANUFACTURE OF LEATHER SHOES IN THE UNITED STATES.

YEAR	TOTAL NUMBER OF LEATHER BOOTS, SHOES, AND SLIPPERS PRODUCED	NUMBER OF FACTORY WORKERS	PAIRS OF SHOES PER CAPITA					EXPENDITURE BY AMERICAN PEOPLE FOR FOOTWEAR
			MEN'S	BOYS' AND YOUTHS'	WOMEN'S	CHILDREN AND INFANTS	OTHER, INCLUDING MISSES' SLIPPERS	
1943	461,573,189x	186,900	1.87	1.60	3.41	2.96	0.65	$1,898,100,000
1942	483,869,548y	*	2.10	1.40	3.75	3.11	0.52	$1,851,800,000
1941	498,381,625z	216,400	2.21	1.37	3.71	3.27	0.48	$1,481,000,000
1940	404,151,472	*	2.01	1.31	3.61	2.91	0.45	$1,263,800,000
1939	424,136,411	218,028	2.03	1.33	3.58	2.94	0.40	$1,219,900,000
1938	390,746,226	*	2.07	1.35	3.64	2.81	0.41	$1,244,400,000
1937	411,968,780	215,438	2.17	1.33	3.72	2.71	0.51	$1,266,800,000
1936	415,227,276	*	2.17	1.35	3.52	2.58	0.48	$1,203,000,000

*= Census of shoe factory workers not taken.
x= Includes 45,663,314 pairs of shoes for the government.
y= Includes 40,875,494 pairs of shoes for the government.
z= Includes 15,284,574 pairs of shoes for the government.

The above table has been compiled from statistics furnished by the United States Department of Commerce.

WHAT ONE DISTRIBUTOR DID IN ONE YEAR

Shoe Factories	Total Service Cost	Approximate Investment in Equip. & Piping	Annual Gross Income
11	$22.71*	$2700.00**	$14,314.17

* Or slightly more than 15/100 of 1%! ** 18.9% of one year's gross income.

on liquefied petroleum gases at seven o'clock in the morning.

You've got to plan every step in advance, and all material down to the last flare nut must be on hand. Regulating equipment must be tested and known to be in perfect condition beforehand. There can't be any slip-ups on a job of this kind, for a manufacturer isn't going to forgive you if you interfere with production.

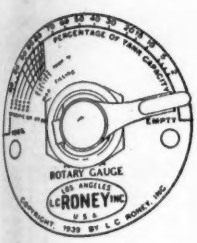
You can't drop the job when the last piece of equipment is connected and tested. Instead, you must be right on the spot when the operators arrive in order to instruct them in the operation of the new equipment. We'll talk about this phase of the installation later.

Let us study Table 2 to see where lies our field of opportunity. Most of the nation's shoes are manufactured in 16 states, eleven of which are east of the Mississippi river. The greatest concentration of the industry is along the north Atlantic coast in the states of Maine, New Hampshire, and Massachusetts. Massachusetts leads all states in shoe production. Other concentrated shoe manufacturing areas lie in the states of Wisconsin, Illinois, Missouri, and Pennsylvania. The industry is gradually shifting to the middle west to areas around Chicago and Kansas City because of the location of packing houses at these points with the consequent near-at-hand supply of hides. It is gaining in importance in the states of Oregon and California.

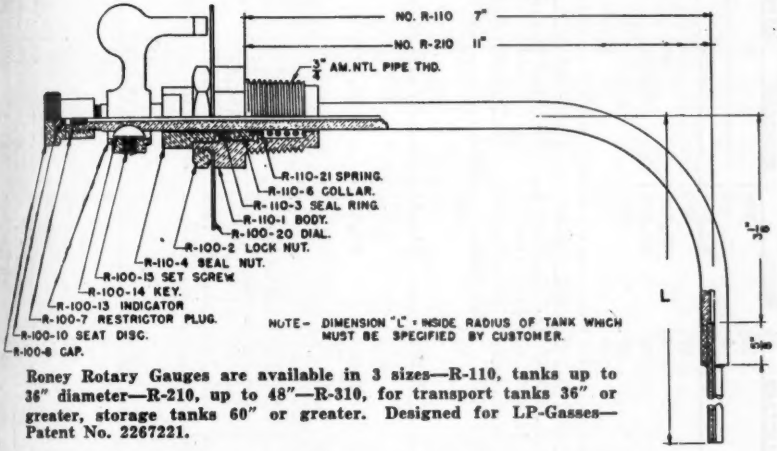
Shoe manufacturers usually prefer to locate in small rural communities which are close to the large cities. This is because of low taxes and a plentiful supply of moderately priced and steady labor. Such communities rarely have piped gas service, for which reason the majority of shoe factories are legitimate prospects for the liquefied petroleum gas distributor.

Shoe factories can be established in almost any kind of a factory building. I mention this fact because if any of you have an abandoned factory in your town, your easiest bet is to get a shoe manufacturer to consider it. In placing the facts before him, bear in mind that he is interested in low rent, low taxes, and a plentiful supply of labor that is willing to work for a reasonable wage.

A Preliminary Study of a Shoe. Before you start out to tackle a shoe manufacturer, it is well to know a little bit about the construction of shoes. The best place to start is right at home, and it wouldn't do any harm for you to take one of your old shoes apart and see how it is made. At least,



There Is No Substitute
For Accuracy
Be Sure You're Right With A
RONEY ROTARY GAUGE



Roney Rotary Gauges are available in 3 sizes—R-110, tanks up to 36" diameter—R-210, up to 48"—R-310, for transport tanks 36" or greater, storage tanks 60" or greater. Designed for LP-Gasses—Patent No. 2267221.

Compare Our Gauges . . .

With non-positive types and you will find that they offer the most accurate method of determining the contents of butane or propane tanks.

Roney Rotary Liquid Level Gauges were developed specifically for the measuring of LP-Gasses and their unique design completely eliminates guess work in the computation of liquid levels.

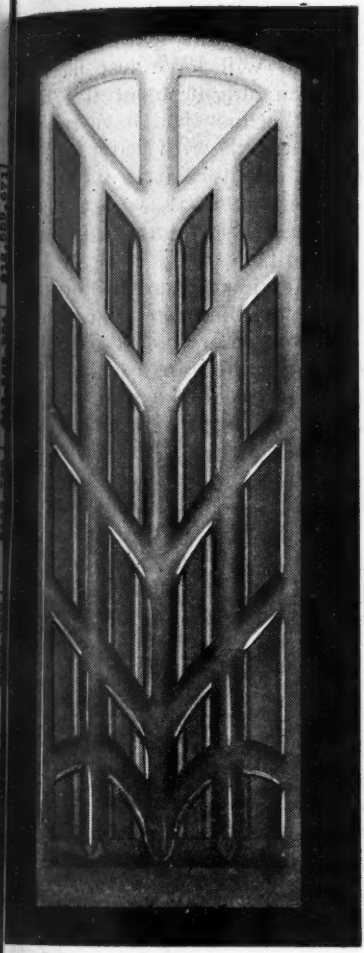
Because of their simplified construction, they are not subject to many of the potential failures found in other measuring devices—such as sticking indicators, bent float rods, loose counter balances, magnet failures, frozen bearings and gears out of mesh.

The slight amount of gas liberated in gauging creates NO HAZARD whatever—as proven by the many installations operating successfully in every part of the country. For further information see page 154, 1945 Catalog Butane-Propane Appliances and Equipment, published by Butane-Propane News.

L.C. RONEY INC.
1740-44 W. 59th ST. • LOS ANGELES, CALIF.

TABLE 2. GENERAL STATISTICS PERTAINING TO THE SHOE INDUSTRY IN THE UNITED STATES FOR 1939

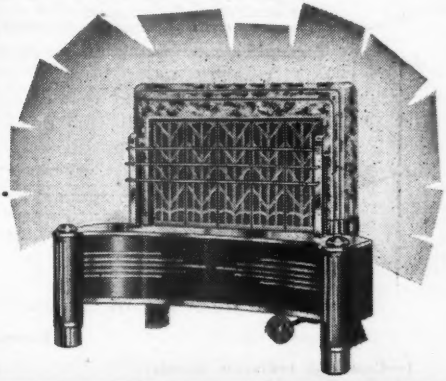
ITEM	MAINE	MARYLAND	MASS.	MICHIGAN	MINNESOTA	MISSOURI
Number of establishments	57	12	275	8	6	68
Proprietors and firm members	14	1	60	----------	----------	1
Total employees reported	16,581	3,094	49,944	1,145	843	28,595
Salaried officers	97	20	450	10	17	59
Salaried employees	831	218	3,123	83	69	1,366
Factory wage earners	15,510	2,706	45,595	1,001	716	26,918
Sales employees	129	48	750	50	41	241
Construction employees	8	102	19	1	----------	9
Other employees	6	----------	----------	----------	----------	----------
Total salaries and wages	$14,893,349	$2,728,789	$47,785,667	$1,123,411	$755,370	$25,280,518
Cost of materials & supplies	$25,286,753	$4,665,934	$76,176,445	$2,888,286	$1,359,035	$52,341,049
Value of products	$46,162,403	$8,276,100	$142,110,567	$4,686,142	$2,915,967	$100,346,106
Value added by manufacture	$20,875,650	$3,610,166	$65,934,122	$1,797,856	$1,556,932	$48,005,057
ITEM	NEW HAMPSHIRE	NEW JERSEY	NEW YORK	OHIO	OREGON	PENNSYLVANIA
Number of establishments	70	23	298	37	5	91
Proprietors and firm members	6	3	60	5	4	31
Total employees reported	19,716	2,826	34,127	16,129	72	16,113
Salaried officers	80	53	341	38	6	143
Salaried employees	1,006	153	1,563	615	5	998
Factory wage earners	18,528	2,536	31,221	15,159	60	14,746
Sales employees	97	78	970	305	1	222
Construction employees	5	6	20	12	----------	4
Other employees	----------	----------	12	----------	----------	----------
Total salaries and wages	$19,061,483	$2,805,212	$35,252,461	$15,394,303	$94,651	$14,177,160
Cost of materials and supplies	$37,009,960	$4,178,942	$54,209,356	$21,128,667	$117,892	$24,625,587
Value of products	$63,464,629	$8,000,688	$104,144,500	$47,200,357	$233,387	$46,117,984
Value added by manufacture	$26,454,669	$3,821,746	$49,935,164	$26,071,690	$115,495	$21,494,397
ITEM	TENNESSEE	TEXAS	WASHINGTON	WISCONSIN	OTHER STATES	
Number of establishments	14	6	6	52	19	
Proprietors and firm members	----------	1	5	11	8	
Total employees reported	4,985	256	106	11,099	4,549	
Salaried officers	10	8	4	67	29	
Salaried employees	163	20	8	659	310	
Factory wage earners	4,757	207	80	9,770	4,618	
Sales employees	55	21	14	603	42	
Construction employees	----------	----------	----------	----------	----------	
Other employees	----------	----------	----------	----------	----------	
Total salaries and wages	$2,332,488	$324,741	$149,954	$11,676,065	$3,884,706	
Cost of materials and supplies	$10,445,888	$354,608	$241,218	$22,462,824	$7,458,373	



One Big Reason

HUMPHREY RADIANTFIRES *Lead The Field!*

Beautiful in design and scientifically constructed to obtain the maximum efficiency from the gas burned, Humphrey Radiants contribute greatly to the Leadership enjoyed by Humphrey Radiantfires from coast to coast. Humphrey Radiants are light, porous, and specially processed to produce an abundance of pure, radiant heat.



A HUMPHREY PRODUCT

REMEMBER THIS MARK OF QUALITY

GENERAL GAS LIGHT COMPANY KALAMAZOO, MICHIGAN

23 Warren St., New York City | 2nd Unit Santa Fe Bldg., Dallas | 225 Eleventh St., San Francisco

you should carefully examine one of your shoes.

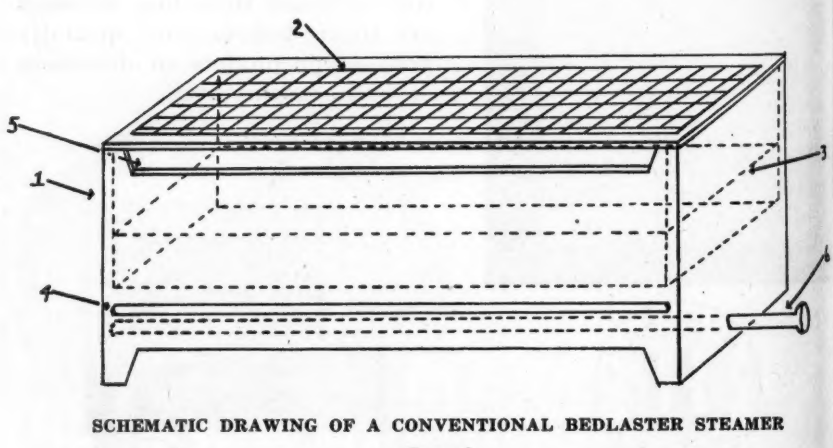
Let us start with the toe. Note how the leather is fitted smoothly to a curve and folds in between the inner and the outer sole. Now take a piece of paper, or better still, a thin piece of leather, and try to form it into this shape. You will find it impossible to do this without producing wrinkles in it, but if you soaked either the paper or leather in warm water for a while you might, by pulling and stretching, be able to accomplish it.

Next, carefully observe the rear portion of the shoe and try to do the same thing with a piece of dry paper or leather. Your results will be better in this case, but not perfect. You will find that here you can also do a better job if you first thoroughly soak the material.

In both instances, however, you will find that the leather will dry hard and will have lost much of what you might term its "life." This is because you have removed its natural oils with water, and you can never restore it to its original condition, even if you use artificial means to again impregnate it with oil.

It is obvious from the foregoing that the leather must be softened in some manner so that it may be easily stretched in forming it to the toe and heel of a shoe, and that the easiest way to do this is to moisten it, but this moistening process must only be carried to the minimum essential point.

The answer to the problem is steam, but any old kind of steam will not do. It must be a moist steam. The steaming must be car-



SCHEMATIC DRAWING OF A CONVENTIONAL BEDLASTER STEAMER

Legend

1—Cast iron bedlaster steamer.

2—Screen rack over top of steamer and on which a cloth is placed, stock to be steamed being placed upon the cloth.

3—Water level inside of steamer.

4—Vent slot in bedlaster steamer casting for venting burned gases.

5—Side of casting cut down in order to vent excess steam.

6—Bar burner.

In 1943, 186,000 workers in 1071 factories produced 461,573,189 pairs of boots, shoes and slippers. American people spent $1,898,100,000 for footwear and shoe manufacturers paid out $273,808,500 in wages to factory workers, alone!

In 1941, at an all-time high, 498,381,625 pairs of leather shoes, boots and slippers were produced by 216,400 workers.

ried only to the point where the leather becomes pliable, and in a sense, ductile. Immediately when the leather is at this point the process of steaming must be stopped and the piece must be pulled into shape over the shoe-last. This is why means for steaming these parts of a shoe will be found at each bedlaster and pull-over machine.

You might say that a central plant supplying steam to steam boxes at each machine would be the answer to the problem, but this has been tried many times and it has been found wanting.

The reason is the varying demands of each machine operator. Some operators work faster than others. Sometimes all machines will not need steam for a few minutes, then all of them will need steam at once. In order to assure a constant supply of steam in such a system, the central plant must supply more steam and at a higher temperature than is actually necessary. When all machines are operating, the steam supply might have the proper moisture content. When but one or two machines are working, the steam might be too dry.

Then again, different operators prefer a varying type of steam, and different grades of leather require more or less moisture and short or long periods of gradual steaming. A central steam plant simply does not work out in practice for these operations.

The answer to the problem lies in individual steamers, and we shall see pictures of such steamers in the next chapter. Fundamentally, a steamer might be nothing more or less than a pan of water with a hood over it for directing the steam in the proper direction. Beneath the pan would be some type of heat-supplying unit. The electric industry was quick to grasp the idea, and constructed heavy cast iron steamers of the proper shape with electric elements bolted to the bottoms or inserted in tube shaped devices.

Here the trouble began. Thermostats and rheostats were provided to control the temperature. Thermostats burned out, rheostats wore out. Then switches with series and parallel connections to multiple heating elements were tried. The results were the same as on the top burners of an electric range. The energy inputs were in steps or jumps, and exact control of results was not possible.

Then to cap the climax, operators would forget to fill their steamers with water, or would fail to keep the electric elements properly immersed. This resulted in burned-

Most of nation's shoes are produced in 16 states, 11 of which are east of the Mississippi river. Massachusetts leads all states in shoe production.

out elements and the consequent stoppage in production of one machine until the steamer was repaired or replaced.

There was also an element of danger in electric steamers. Because of the number of them which were necessary, and because of competitive reasons, they were not as well constructed as they might have been. The slopping of water over them did not help the electric system any; the vibration of the machinery near which they were necessarily placed loosened up connections, chafed insulation and broke wires. Short circuited or grounded steamers were the result. Many an operator has danced a jig as he became crossed up with a grounded electric steamer, and more than one shoe factory has burned to the ground as a result of short circuits in them.

Electricity Is Feared

Shoe manufacturers have come to look upon electric steamers as not only an item of expense, but one of danger as well. Where liquefied petroleum gas distributors are on their toes, there are more converted gas pull-over and bedlaster steamers than there are such steamers operating on electric current.

A shoe factory of moderate size will use from 300 to 600 pounds of LP-Gas per week. Here is a potential load of from 16,000,000 to 32,000,000 pounds of liquefied petroleum gases per year. A fair competitive price averages 6 cents per pound. Talking in gallons of butane or butane-propane mixtures, here is a load of from 3,312,927 to 6,625,854 gallons at a price of 29.1 cents per gallon which is literally begging to be ours.

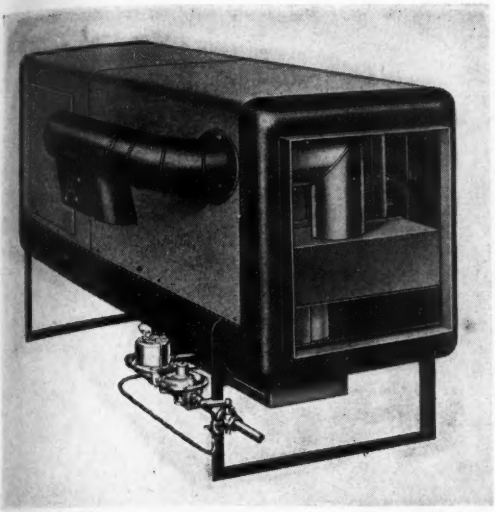
If there is a single shoe factory in your immediate vicinity that is not using liquefied petroleum gas, get busy, for each one of them will increase your gross income from $900 to $1800 per year. Here is anywhere from $1,000,000 to $2,000,000 worth of fuel business, practically all of which lies off the gas mains, and it should be ours!

Gas Service Calls Are Few

There is one outstanding advantage of gas equipment in a shoe factory, and experienced operators appreciate it. The equipment is of such a nature that it gives very little trouble. I know of one gas distributor who has 11 shoe factories as customers in one town, and he does not average two service calls per factory per year. His actual service cost for the 11 factories in 1943 was $22.71. His gross income from them was $14,314.17. This service cost is but slightly more than 15/100ths of 1%. His investment in equipment and piping in the 11 factories totals approximately $2700, which is but 18.9% of one year's gross income.

The installations paid for themselves and showed a profit in the first year, and they have now been in almost continuous operation for nine years.

There is one word of caution which I must pass on to you. Just because shoe factory equipment appears to be so simple, don't think that you can get by with chucking



TIGHT SQUEEZE?
Space at a premium? No basement? Under these conditions, in home, shop, factory or other building, consider the . . .
PAYNE "SPACE-SAVER" (HU) FORCED AIR UNIT

PAYNE MODELS meet EVERY heating need

.You have the equipment to match the job . . . when you handle PAYNE gas-fired, warm air furnaces. The PAYNEHEAT "line" is complete. To Dealer and Gas Company, this means *more sales* and *satisfied customers.* ★ The "Spacesaver" Unit, like other PAYNE models, reflects more than 30 years' specialized experience. All these models, progressively improved, will again be available . . . as men and materials are released from war production.

PAYNE ZONE-CONDITIONING
Successor to old-fashioned central heating. Winter air-conditioning plus cooling summer ventilation . . .controlled by zones or rooms. *Request new booklet.*

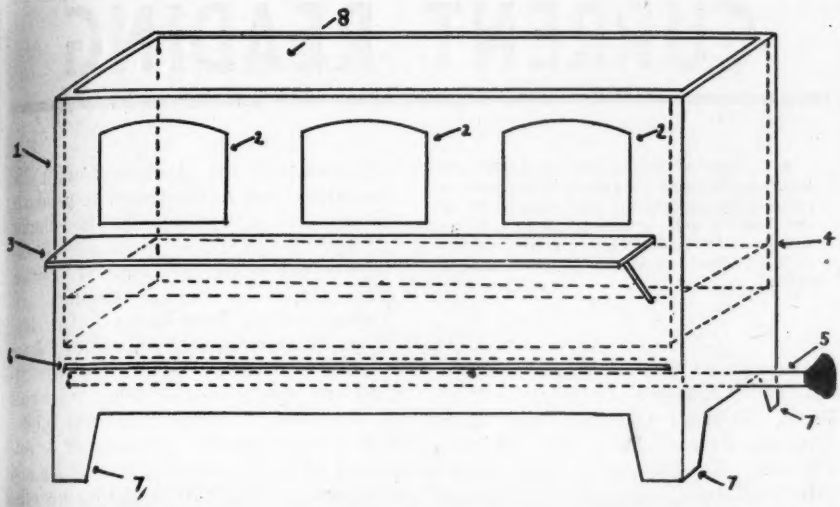
PAYNE FURNACE COMPANY
(One of the Dresser Industries)
BEVERLY HILLS, CALIFORNIA

PAYNEHEAT
OVER 30 YEARS OF LEADERSHIP

GAS FUEL HAS EVERYTHING

"MY DREAMS ARE GETTING BETTER all the time." And the brightest spot in women's dreams is the *center* of tomorrow's kitchen, an ESTATE HEATROLA RANGE equipped for LP-Gas. So far ahead that it fits right into the most streamlined future. The ESTATE HEATROLA RANGE was first to introduce the modern, table-top design. First with the Air-Flow Oven. First with the Grid-All. First with the exclusive Bar-B-Kewer (separate meat oven). First with so many features for extra convenience and economy and beauty that it's first choice of homemakers, architects and builders who will turn today's better dreams into tomorrow's better kitchens.

Estate Heatrola Ranges for LP-Gas are made by THE ESTATE STOVE COMPANY, Hamilton, Ohio. • First with the finest for over 100 years.



SCHEMATIC DRAWING OF A CONVENTIONAL PULL-OVER STEAMER

Legend

1—Cast iron pull-over steamer.

2—Holes into which the toes of the shoes are inserted.

3—Shelf on which heels of shoes rest.

4—Water level.

5—Bar burner.

6—Vent slot in pull-over steamer casting for venting burned gases.

7—Supporting legs.

9—Open top to steamer. A cloth is placed over it and draped down over the openings (2). When toe of shoe is inserted in the hole the cloth is fitted in around the shoe so that the rest of it will not be dampened by escaping steam.

any old kind of a bar burner under a pull-over or bedlaster steamer, or that any type of a hand torch will do for singeing. Conversions must be carefully made. Torches must be of just the right type. Shoe manufacturers watch the pennies, and they are not going to put up with unnecessarily high fuel costs. Machine operators in these factories are skilled artisans, and they know just what they want in the way of results from gas burning equipment.

While the shoe industry is highly competitive, its management has ways of finding out what is going on in other factories. Then there is the great United Shoe Machinery Corporation which exercises a benevolent control over the industry and passes the word of good or bad equipment along from factory to factory.

We'll learn much more of them later, but for the present let this fact stick with you: If your factory conversion is a poor one, you won't get by with it for long, and if you do not lose the business to your competitor you will have the thankless task of doing the job all over again, in addition to losing prestige with your customers.

CURRENT READING

• Reviews of new books, pamphlets and articles published in recent magazines of interest to technicians and executives in the liquefied petroleum gas industry. Those interested in reading any complete article or book should write to the publications named.

•

Petroleum: Source of Raw Materials for Chemical Industry — J. H. Boyd, "Journal Chemical and Engineering News," Feb. 25, 1945, pp. 345-348. Transportable hydrocarbon intermediates from petroleum offer wealth of raw materials for organic synthesis; insistence on high purity increases cost; seventeen hydrocarbons now being produced and shipped in commercial quantities — all but three of commercial purity; many synthesized to meet needs of aviation gasoline and synthetic rubber war programs; other products available postwar.

New Gas-Engine Design Reduces Fuel Consumption 25 Per Cent—R. L. Boyer, "Oil and Gas Journal," March 24, 1945, pp. 88, 89-91. This detailed explanation of the new diesel engine development perfected by the author which makes possible the use of either gas or oil as fuel without any electrical sparking device, outlines the engineering principles by which the new system is applied. It also cites a few of the obvious applications for the new dual-fuel control mechanism.

Hot-Engine Sludge and Its Control —H. C. Mougey, "Society of Automotive Engineers Journal," March, 1945, pp. 129-137. Sludge is a slushy mass composed of oil thickened with the oxidation and decomposition products of the oil and fuel. In hot-engine sludge the oxidation products of the oil are the principal cause of trouble. The steps in the development of sludge control have been: 1. Development of more highly refined oils from which the easily oxidizable sludge-forming material has been removed; 2. Addition of either oxidation inhibitors or detergents, separately; 3. Addition of both oxidation inhibitors and detergents together in the same oil.

Predicting Viscosity of Gases at High Pressure—E. W. Comings and B. J. Mayland, "Chemistry and Metallurgy," March, 1945, pp. 115-116. Where reliable data on the viscosity of gases at high pressures are not available, a sufficient degree of accuracy can usually be obtained for design purposes through the use of a new chart developed by the authors. To employ the chart in predicting the viscosity at some elevated pressure it is necessary only to know the critical pressure and temperature of the gas, plus the viscosity at atmospheric pressure.

The Storage of Butadiene and Isobutylene — "Petroleum Engineer," March, 1945, pp. 85-91. The results of the review and research reported in this article on butadiene and isobutylene indicate the following: a. Where precooling is unnecessary, the compounds should be stored at a temperature of about 32°F. and corresponding working pressures of about 3 or 4 lb. per sq. in. gage. This conclusion

"ECONOMY" — —

— — *The Dealers "Buy Word!"*

Leading dealers choose ECONOMY BUTANE-PROPANE SYSTEMS because they are constructed in strict accordance with A.S.M.E. Code; approved by the Railroad Commission of Texas; inspected by Ocean Accident & Guarantee Corporation, Ltd., and bear the Underwriters label. Write for complete information and prices!

TANKS BY BANKS

DALLAS TANK *Company, Inc.*

201-5 W. Commerce St., P. O. Box 5387
Dallas, Texas

is supported by the following facts: (1) The loss of product at about 32°F., through dimerization and/or polymerization, is negligible; (2) storage at about 32°F. results in the lowest total annual operating cost as well as the lowest initial cost of the storage plant; (3) the amount of steel required for the containers at the recommended storage temperature of 32°F. is less than one-half of the steel required for containers in which the compounds are stored at ambient temperatures. b. Where precooling is required, the most economic storage temperature should be determined according to procedure suggested under "Filling Refrigeration Costs" in the original bulletins. c. The containers should be of a maximum size for the total capacity involved, because within the range of capacities considered for the synthetic rubber plants and for the producers of raw materials, the larger the container size the lower the cost per unit of product stored.

Flow Equations for Gas Considering Deviations from Ideal Gas Laws—W. O. Clinedinst, "American Gas Journal," March, 1945, pp. 12-20. This paper is presented in two parts. Part 1—Development of flow equations; Part 2—Friction factor and use of equations.

Factors Affecting Measurement of Wet Gas—T. C. Shaw, "Petroleum Refiner," March, 1945, pp. 103-107. There are a number of factors which have a pronounced effect on the problem of wet gas measurement, principally in determining the coefficient to be used. Factors considered most important are: 1. Density of the fluid passing through the orifice; 2. Pulsating flow; 3. Deviation from the true gas law; 4. Correct reading of the charts upon which the pressure and the differential are recorded. The first three of these factors are of extreme importance in determining the proper coefficients to be used in wet-gas measurement, while the fourth is a mechanical problem that has no bearing upon the flow of the fluids, but entirely upon the computation of the results recorded by the meter.

Management Alters Its Approach to Fire Protection—F. A. Epps. "National Petroleum News," Dec. 27, 1944, pp. 37, 38, 45. Fire fighting equipment may be the best but what is needed is instruction and inspection to keep fires from starting, the author believes.

Graphical Solution of Friction Loss Problems in Fluid Flow—A. E. Kroll, "Chemistry and Metallurgy," March, 1945, pp. 110-111. To eliminate the "back breaking" mathematics involved in the method ordinarily used to solve problems of pressure drop due to friction, the author has prepared three graphs which reduce the calculations to the simple multiplication of three factors. Accuracy of the method is well within the limits of practical operations.

Sun's New Automotive Research Laboratory—O. W. Willcox, "World Petroleum," March, 1945, pp. 60, 61-110. A description of Sun Oil Co.'s new laboratory and its equipment at Marcus Hook, Pa. Illustrated.

Cylinder Wear is Reduced by Efficient Program—P. Reed, "Oil and Gas Journal," March 24, 1945, pp. 68-70. The following record has been made by the the Fritsch, Texas compressor station of the Texoma Natural Gas Company: Wear per 1000 hp. hours has been reduced from 0.002 to 0.0005 in. since instituting the unusual maintenance program described in this article.

How to Figure Heat Losses

SALESMEN cannot have too much information upon the subject of space heating, a field much neglected by the LP-Gas industry in the past.

In the March issue of BUTANE-PROPANE *News* (Pages 38 and 39), an article and table were carried which can be universally used in figuring heat losses.

Another method of approach is offered herewith by F. K. Woodring, Clearwater, Fla., distributor of Reznor unit heaters:

"Everyone in the heating field needs a short formula for estimating heat loss in the average building.

"With thermostatically controlled equipment, overheating will be avoided if you install sufficient heating capacity for the coldest day.

"As on most gas-fired installations, the heater is installed within the space to be heated, our formula must be ample to cover the additional air required for venting which will be drawn into the space to be heated.

For health and safety, when an unvented heater is used, additional outside air should be passed through the space to be heated, although this procedure is seldom followed.

"For a building of good frame construction, with double floors, and well plastered walls and ceilings, such an estimate on the heat required can be estimated as follows:

"Take ¼ the area in square feet of all exposed ceilings, floors, and walls, not including window and door openings. Add to the result the total area in square feet of all window and door openings in the exposed walls. Multiply the sum by the difference in degrees Fahrenheit between the temperature wanted in the building and the lowest temperature expected on the outsides of the exposed ceilings, floors, and walls.

"To that result, add two times the number of cubic feet in the space to be heated. The answer will be the number of Btu. required per hour to hold the desired temperature in the space to be heated when the temperature outside is the lowest anticipated.

"In using the above formulas, be certain there are no open fireplaces or other openings into a chimney, as such openings will draw off an unpredictable amount of heat.

"Likewise, never try to estimate the loss of heat through an uninsulated wood or steel ceiling. The only answer is to force the heated air over the floor."

New Type of Service Offered to LP-Gas Men

The Liquid Gas Equipment Corp. will soon offer to liquefied petroleum gas dealers in the West a complete appliance-equipment distribution service. The main office for the company will be at 1355 Market St., San Francisco.

Heading the organization will be J. D. Anderson, formerly with Ransome Co. of Emeryville, Calif. Mr. Anderson has had many years experience in the butane-propane industry. He points out that this type of service will be a great help to dealers in need of equipment.

Certain items will be available immediately and complete lines will be stocked as production permits.

THE TRADE

At a special meeting of the stockholders of **A-B Stoves, Inc.**, of Battle Creek, Mich., the plan of reorganization as submitted to A-B Stoves, Inc., by the **Detroit - Michigan Stove Co.** was accepted and adopted, effective April 25.

JOHN A. FRY

The former will operate as A-B Stoves Division of the Detroit-Michigan Stove Co. Wendell L. Smith, president of A-B Stoves, Inc., was elected to the board and also an executive vice president of the Detroit-Michigan Stove Co.

Mr. Smith will continue as the executive officer of the A-B Stoves Division and will retain the present personnel.

This reorganization brings together two outstanding companies in the gas and electric appliance field. John A. Fry, president of the Detroit-Michigan Stove Co., announces that this is the first step taken in carrying out a comprehensive program for the postwar period to better serve the customers of both companies.

S. R. Hirsch, chief engineer of the **Brunner Manufacturing Co.**, Utica, N. Y., announces the following changes in personnel and duties:

Alfred D. Sullivan has been appointed test and application engineer. Mr. Sullivan, following graduation from Cornell, became a development engineer on reciprocating compressors for the Carrier Corp., Syracuse, N. Y. He was head of Carrier's testing department on reciprocating compressors in 1944, the position he held until transferring to the Brunner organization.

Carlton C. Geiersbach has been appointed design and development engineer. Mr. Geiersbach has been with the Brunner Engineering department since 1936. His engineering experience after leaving Michigan and until joining the Brunner organization in 1936 was on general machine and tool design in varied industries.

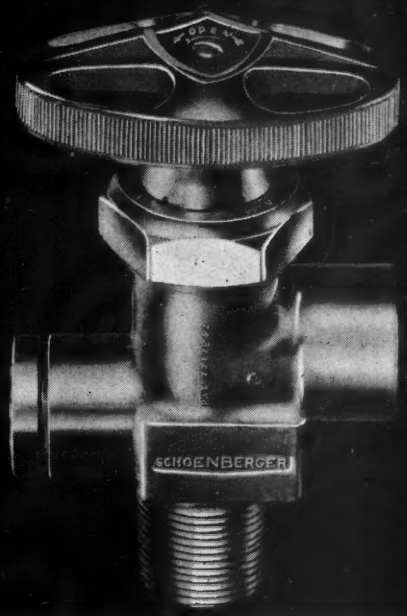
Plans for distribution of Estate "Heatrola" products in the Greater Cincinnati area were completed recently with the formation of "Estate **Distributing Co.**" The new company, a subsidiary of **The Estate Stove Co.**

S. C. Bernhardt (left), vice president in charge of sales, The Estate Stove Co., Hamilton, Ohio, discusses opening of Estate distributing Co. with Ray C. Thomas, manager of the new company.

THE NEW SCHOENBERGER

Diaphragm Packless Cylinder Valve

WITH PRESSURE EQUALIZER . . .



• **The Pressure Equalizer is an exclusive and most important feature.** ***It absolutely prevents the stem from sticking or "checking shut" under any operating condition.*** **This important improvement will be appreciated by engineers and operators as a vital contribution to the L-P Industry.**

Full information is yours for the asking.

We Specialize in Valves and Accessories
for the L-P Gas Industry

THE W. J. SCHOENBERGER CO.

8810 HARVARD AVENUE • CLEVELAND 5, OHIO

Hamilton, Ohio, will have headquarters at the parent company's home office until release of civilian goods, when offices and show room will be opened in Cincinnati.

S. C. Bernhardt, Estate vice president in charge of sales, in making the above announcement, stated that because The Estate Stove Co. has changed its sales policy from direct dealer selling to sales through independent specialty distributors, they want to learn of the distributors problems at first hand. Entering the distribution field in Cincinnati provides this opportunity, as well as providing a proving ground for sales training and sales promotion plans.

Maj. William D. Antrim has returned to the **Bryant Heater Co.** after nearly two years of service with the United States Army Ordnance Department as a supervising research and development expert on artillery ammunition, according to announcement by Lyle C. Harvey, president.

Mr. Antrim will devote his time exclusively to the adaptation of the new Bryant automatic safety pilot to gas range ovens and broilers.

The Acme Equipment Corp., is the successor to Roadmaster Sales Corp., of Texas, with headquarters at 317 S. Pearl St., Dallas, and with Stanley Bent continuing as president of the corporation.

Acme Equipment Corp. presents a complete line of LP-Gas carburetion equipment and some entirely new innovations are claimed to simplify installation, adjustment and services.

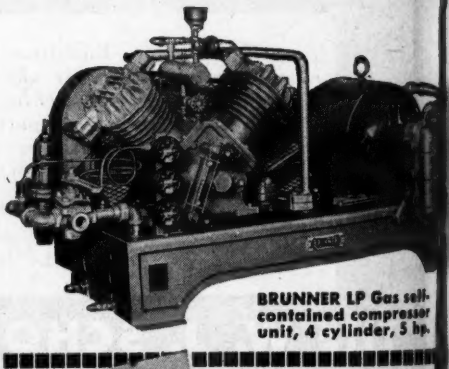
Thomas R. Clark, who has been making conversions of internal combustion engines for 10 years, has designed the new carburetors. Besides carburetors the Acme Manufacturing

YOU LOSE 500 TO 1000 LBS.
of LP Gas in every tank car unloaded

... if you don't salvage residue vapo

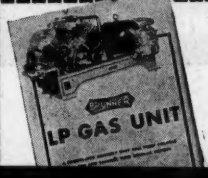
You pay for this residue vapor poundage and for its transportation! It cannot be recovered by an ordinary liquid pump, but it can be recovered with the Brunner LP Gas Unit, a compressor assembly that pumps volatile liquids and salvages their residue vapor. Unloading, too, is speeded. When you buy a Brunner LP Gas Unit you buy a pump that has world wide acceptance and is the best for the purpose, regardless of the price paid. The savings affected liquidate the investment in a short time. On any liquid petroleum handling problem consult:

BRUNNER MANUFACTURING CO.
UTICA 1, NEW YORK, U. S. A.



BRUNNER LP Gas self-contained compressor unit, 4 cylinder, 5 hp.

ARMY E NAVY
BRUNNER
For over 37 years the Symbol of Quality



WRITE FOR T... NEW FREE BOO...

It describes the Brunner LP G... and contains more illustrat... agrams, tables and valuab... mation on the handling o... than any booklet ever issue...

Combination Offer!

SECOND AND THIRD EDITIONS

only **$7.50**

HANDBOOK
BUTANE-PROPANE GASES

In these two volumes, 896 pages of technical information about production, distribution and uses of LP-Gases . . .

ANSWERS

to your questions about

PHYSICAL and CHEMICAL PROPERTIES

PRODUCTION

TRANSPORTATION

STORAGE

DISTRIBUTION

UTILIZATION

REGULATIONS, ETC.

"Few, if any, industries have had as complete and up-to-date technical and operating information to guide them in their early stages of development as has the LP-Gas industry with its Butane-Propane Handbook," says Woodward Martin, Manager Stargas Department, Lone Star Gas Co.

Why not make your library complete? We have a few copies of the revised Second Edition of the Handbook still available. These, and the Third Edition, sell individually at $5 per copy. While they last we offer *both* editions, in combination, for the bargain price of $7.50. Order your copies today.

We pay postage on orders accompanied by check or money order. In California add 19c for sales tax. In Canada add 75c for excise tax.

Send order NOW **$7.50**

TWO VOLUMES . . . SECOND AND THIRD EDITIONS

BUTANE-PROPANE NEWS, 1709 W. 8th St., Los Angeles 14, Calif.

Co. will soon manufacture butane manifolds, gas and air mixing units and vaporizers for city gas plants and industrial uses.

Mr. Clark was one of the first men to successfully convert diesel engines to LP-Gas.

Corwin Carleton Abbott, who was recently appointed sales manager of the gas products division, Pittsburgh Equitable Meter Co., died suddenly in Cleveland, Ohio, May 8, while attending a committee meeting of the American Gas Association.

Mr. Abbott, who was 56, became connected with the Pittsburgh firm in 1936, and previous to his sales appointment had served as acting chief engineer since 1941. He is credited with the development of many regulating and control devices that are widely used on direct war instruments.

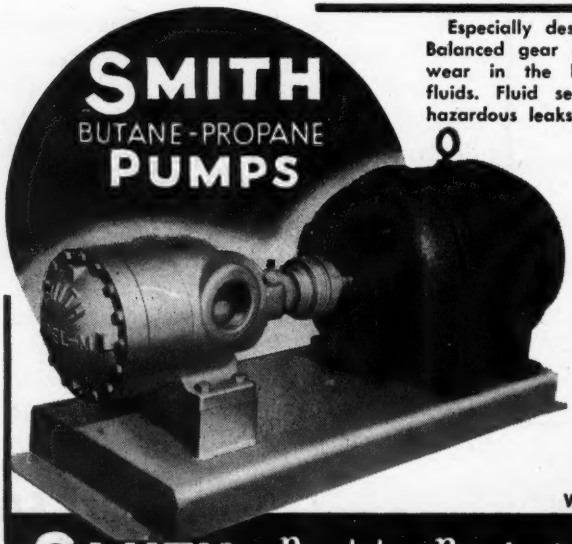
R. L. Fowler was elected chairman of the board and Eugene Holland was elected president of Florence Stove Co. at the recent annual meetings of directors and stockholders.

EUGENE HOLLAND

Mr. Fowler has been president of Florence Stove since 1931. Mr. Holland has been vice president in charge of operation since 1940.

William T. MacKay, assistant vice president, who has been in charge of the Florence plant in Kankakee, Ill., since December, 1944, was elected a vice president.

Newly-elected directors, to fill the



Especially designed for handling LP Gas. Balanced gear construction reduces internal wear in the handling of non-lubricating fluids. Fluid sealed packing box prevents hazardous leaks.

Because of dependable service, SMITH PUMPS have become standard equipment wherever they have once been used. They develop ample pressure for fast transfer or for bottling service.

Illustrated is the new Model M-3, with 3" pipe size. Capacity 100 GPM. Direct connected to 5 HP explosion-proof motor. Other models of correct capacity and design for every L. P. G. use.

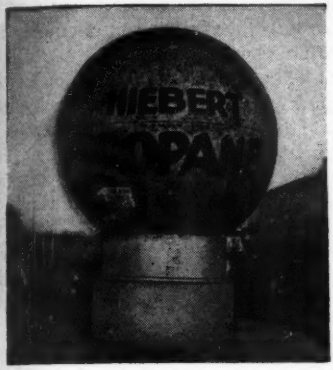
WRITE FOR FULL INFORMATION

SMITH Precision Products COMPANY
1135 Mission Street South Pasadena, Calif.

Superior Construction

USED IN FABRICATING

Propane Tanks



Spherical or Cylindrical Type for Storage, Domestic and Transportation Uses.

5000 net gallon propane storage tanks—250-lbs. working pressure API-ASME code.

Superior Tank & Construction Co.

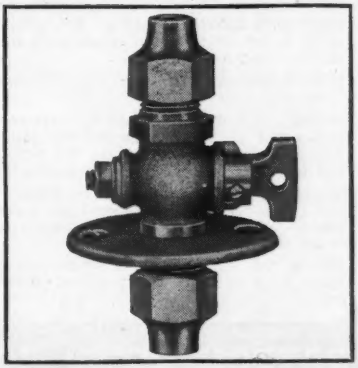
6155 South Eastern Ave. Phone Angeles 4157. Los Angeles, California

SEVENTY-SIX YEARS HAYS DEPENDABLE SERVICE

FLOOR STOP

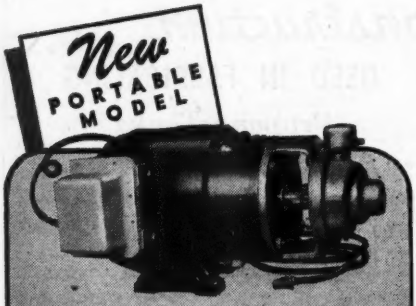
DESIGNED especially for the L. P. G. Industry, the Floor Stop illustrated, for use with flared tubing, has proven ideal for applications where rigid mounting is desirable. Working closely with L. P. G. Engineers, Hays has developed a complete line of stops and fittings to fill the requirements of this fast-growing industry. Stops and fittings are complete with couplings, no other fittings or adapters being necessary.

Send us your specific requirements. We will give you complete information promptly, without obligation.



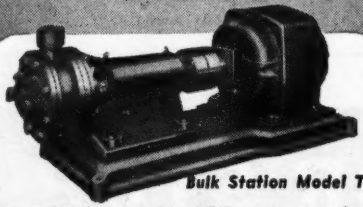
Back the 7th War Loan - Buy More Bonds

HAYS MANUFACTURING CO., ERIE, PA.



Portable Model MXT

DAYTON-DOWD
BUTANE PROPANE PUMPS
Turbine-Type
(Not Rotary . . . Not Centrifugal)



Bulk Station Model T

THE NEW, portable MXT pump can be carried onto consumers' premises. Light — yet rugged. Fills 100 lb. cylinders in only 6 minutes and develops differential pressures up to 80 lbs.

ONLY ONE MOVING PART — the impeller which is hydraulically and dynamically balanced. Longer service life.

LOW PRESSURE STUFFING BOX minimizes leakage and packing troubles.

OTHER D-D MODELS—Model T, *illustrated above,* for all bulk station transfer duties. Available in capacities up to 100 G.P.M. and for differential pressures up to 100 lbs.

Model XT, *not illustrated,* for truck mounting. V-belt pulley for drive from power take-off. Develops differential pressures up to 150 lbs.

WRITE US about your LPG handling problems. Give capacity and pressure requirements, if known.

DAYTON-DOWD CO.
QUINCY, ILLINOIS
CENTRIFUGAL and TURBINE PUMPS

vacancies on the board, are Treasurer A. E. Luke and Vice President G. B. Colburn.

Chairman Fowler, in his report to the directors, stressed particularly the new southern factory. He said in part, "The Marshall Stove Co., Lewisburg, Tenn., is now a Florence property. Its addition to our factories in Gardner, Mass., and Kankakee, Ill., gives us a well-rounded setup of modern, strategically-located plants."

Dean D. Ault has joined the Westcott & Greis division of American Meter Co. as field engineer, with headquarters at Houston.

His experience makes him well fitted to serve the gas and petroleum industries in the territory, where he is well known for his work on recording instruments and automatic control applications in the gas and petroleum industries, and remote automatic control and loading of natural gas regulators.

Arthur Stockstrom, president of **American Stove Co.,** St. Louis, has announced the retirement of Robert K. Clark, manager of the George M. Clark and Co. Division of American Stove, Harvey, Ill. Mr. Clark is the son of George M. Clark, who founded George M. Clark and Co. in 1881.

Mr. Clark will continue as a director of American Stove Co. Harold B. Isaac will succeed him as manager.

A new and instructive manual on the application and operation of automatic gas heating controls has just been published by **General Controls,** 801 Allen Ave., Glendale 1, Calif. The bulletin No. S1-100, consisting of 32 pages bound with cover, includes many applications of gas control valves, with detailed drawing showing their specific applications on various hook-ups. The drawings are made

CENTURY

Model K Converter

New design, backed by 18 years' experience, gives you . .

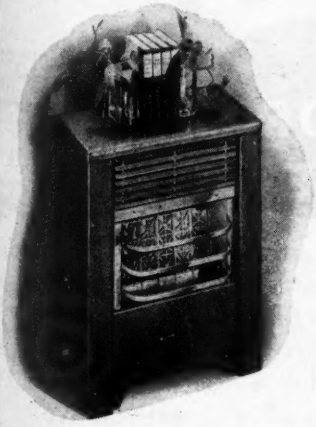
Simplicity
Compactness
Dependability
Rugged Construction

The new Model K Converter has been tried and tested on trucks and oil field engines and is proving its dependability and properly engineered features on new conversions for butane and propane.

Model K Converter . . . for engines of large horse power . . . up to 500 H.P.

CENTURY GAS EQUIPMENT CO.

11188 Long Beach Blvd., Lynwood, Calif.



FEATURES THAT SELL

A.G.A. Approval, Hi-Crown Burners, Automatic Lighting, Syphonaire Chassis, and Air Insulated Cabinets are features your customers want. Finer —Safer heaters, yet priced unbelievably LOW. Write for literature.

DEARBORN

WORLD'S FINEST...SAFEST

L. P. G. GAS HEATERS

A complete line of Vented and Unvented Quality heaters. Their Ultra Smart Appearance, Outstanding L.P.G. Performance and many Exclusive Features create unprecedented user enthusiasm. You are assured satisfied customers and decidedly lower service costs when you sell this fine line.

BUT. NAT.
PRO. MFG.
MIX. GAS.

FAMOUS HI-CROWN BURNER

BLUE FLAME PILOT LIGHT

Leading L.P.G. Distributors from coast to coast rate it the finest of all burners for Butane. It "performs" without coaxing, constant cleaning or adjusting. Its quiet, odorless operation, great flexibility and reserve capacity insures your customers being completely satisfied.

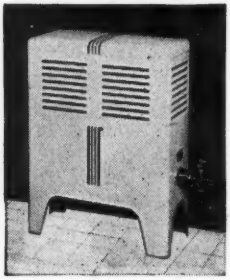
DEARBORN STOVE CO.

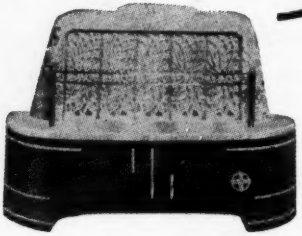
3256 Milwaukee Ave. CHICAGO, ILL.

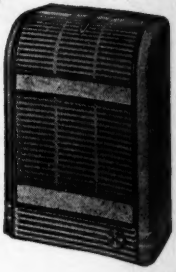
3625 S. Grand Ave. LOS ANGELES, CALIF.

Armstrong

QUALITY SINCE 1899







No. 10-C Bathroom Heater—1-pc. body finished in white porcelain enamel. Cast iron burner, adjustable air mixers. 14½" high.

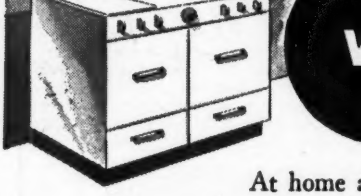
No. 690 Radiant Heater (center)—Finished in brown vitreous enamel. 17¾" high. 20,000 or 24,000 B.T.U.

Although our plant is devoted largely to war production, we still make some gas heaters. Deliveries to both old and new customers on a quota basis.

ARMSTRONG PRODUCTS CORP.

DEPT. BP HUNTINGTON, W. VIRGINIA

No. 900 Circulating-Radiant Heater—Designed for proper combustion to produce both radiant and circulating heat. Brown porcelain enamel finish. 19" high. 18,000 or 28,000 B.T.U.



IN WAR OR PEACE

At home and on the industrial front, a dependable source of Butane and Propane means more satisfied customers. For more than fifty years, through wars and in peace times, Carter has faithfully served. Write us for higher quality Butane and Propane.

The **CARTER** *Oil Company*

DEHYDRATED **PROPANE • BUTANE**

WHOLESALE ONLY

TULSA, OKLAHOMA

in perspective to permit easy interpretation.

A feature of the bulletin is a presentation of service troubles that may occur. In addition to these troubles, possible causes of the trouble and remedies are indicated.

A copy may be obtained free from the manufacturer.

C. K. Patton has joined the Ward Heater Co. as Southern manager, according to a recent announcement by H. J. Smith, president of that company. Mr. Patton's offices will be on the 10th floor of the 2nd Unit Santa Fe Building in Dallas, Texas.

C. K. PATTON

Formerly connected with the Dallas Gas Co. as business manager, Mr. Patton is well known to men of the industry. He has also served as new business manager for the old Texas Cities Gas Co. Both Texas Cities and Dallas Gas were at one time subsidiaries of the Lone Star Gas Co.

John W. Brice, executive vice president and director of Carter Oil Co., affiliate of Standard Oil Co. (New Jersey), assumed the post of assistant coordinator of Jersey Standard's world-wide producing activities on June 1.

Mr. Brice, who will be with the New York office, has resigned his positions with Carter Oil Co. at Tulsa.

Lloyd B. Smith, son of the late L. R. Smith, for many years chairman of the board of the A. O. Smith Corp.,

VIKING... Has Completed 34 Years Building The Most Popular Rotary Pump On The Market!

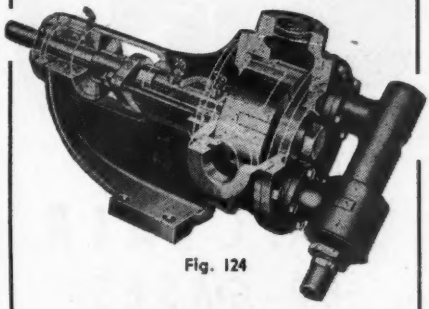


Fig. 124

10-18-35-50-90-200-300 GPM CAPACITIES

•

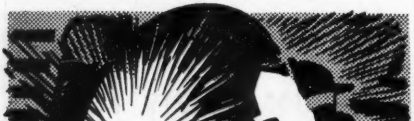
Here are the reasons:

- Only 2 moving parts, each self-supported.
- Large sealing surface eliminates rapid slippage from wear.
- No small gadgets requiring frequent replacement.
- No pulsation.
- Delivers against discharge pressures.
- Low power requirements.
- Low speed—longer life.

For complete information about Viking Rotary Pumps widely used today in the butane-propane industry, write for Bulletin Series 2300. It's free and will be sent to you by return mail.

VIKING PUMP COMPANY
CEDAR FALLS, IOWA

GIVE "ON THE SPOT" SERVICE



WITH

SINCLAIR LP-GASES

There's money in "spot service" when you sell Sinclair Liquefied Petroleum Gases. The easy portability of this fuel makes its safe, convenient and economical for use ANY TIME—ANYWHERE.

Now Sinclair LP-Gases are on military duty in arctic cold and tropic heat . . . right on the heels of advancing soldiers . . . repairing mechanical casualties and powering mechanical monsters.

Liquefied Petroleum Gases are serving as essential elements in synthetic rubber, the manufacture of high-octane aviation gasoline, in chemicals and plastics, and for heat, power and fuel in countless defense plants, factories and war projects.

SINCLAIR PRAIRIE OIL COMPANY

Liquefied Petroleum Gas Division

Sinclair Bldg. Tulsa, Oklahoma

Milwaukee, was elected vice president and member of the board at a director's meeting May 1.

Morris J. Vollmer, former assistant to the president, was named assistant secretary and assistant treasurer, and A. von Wening, vice president and controller, was elected to the board.

The Tappan Stove Co., Mansfield, Ohio, has recently completed a three day sales convention, held for presentation and discussion of the present gas range situation with an outlook towards future production.

Plans were also announced to the former representatives attending the convention of resuming their former responsibilities when gas range production hits a higher peak.

The Robertshaw Thermostat Co. announces a change of address of its New York office from 30 Church St. to 19 East 47 St., New York 17.

The Robertshaw Thermostat Co., as well as American Thermometer Company and Grayson Heat Control, Ltd., divisions, will be represented in New York by Joseph L. Gabris, manager of the Eastern district.

New Mixed Gas Research Bulletin Planned by AGA

The Mixed Gas Research Committee, a joint committee of the Natural Gas Department and the Technical Section, AGA, is submitting to the gas industry for criticism new mixed gas research data, preparatory to publication of the findings in bulletin form.

Latest studies conducted by the American Gas Association Testing Laboratories staff under the sponsorship of the committee encompass substitution of gases with heating values ranging from 800 to 1800 Btu. per cu.

ft. for three different base natural gases of high heating value, high methane content, and high gravity combined with high inert content, respectively.

New interchangeability equations have been developed which take into consideration flash-back, lifting and yellow tip limits of adjustment and substitute gases. Mathematical methods of determining these characteristic limits have also been outlined. Graphical interpolations of formula factors, formerly complicated and time-consuming in calculation, will make possible complete solution of equations with nothing more than simple addition.

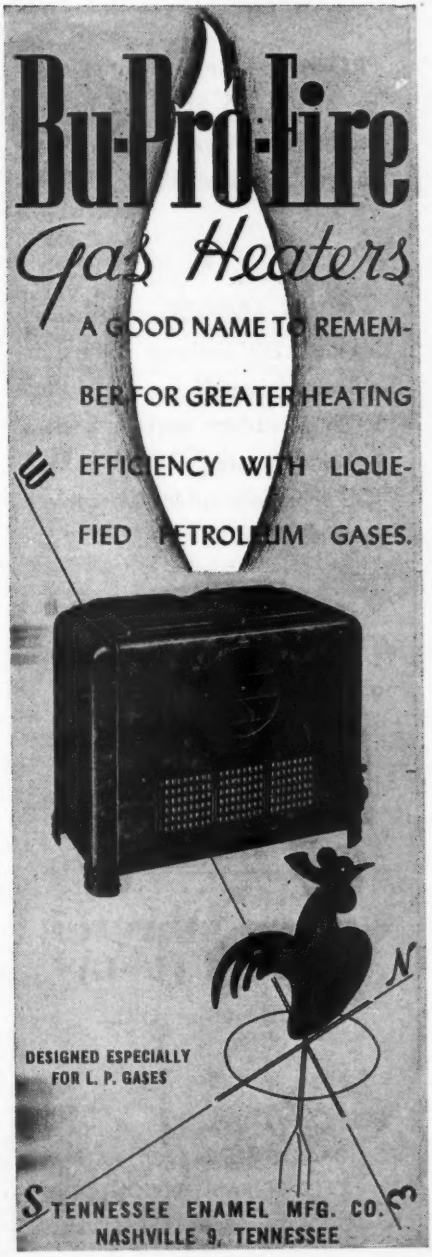
These new data when published will supplement previous mixed gas research studies on base manufactured gases to include mixtures of higher heating values as well as utilization of butane-air and mixtures of butane and city gases to meet fluctuating demands.

Wage Changes Considered For Conversion Program

A procedural first step in the determination of appropriate wage rate structures for plants converting from war production to the production of civilian goods was outlined by the National War Labor Board in a statement received May 9 by Thomas Fair Neblett, chairman of the Tenth Regional War Labor Board.

Mr. Neblett said the new policy stresses the use of collective bargaining and the speedy conversion of wage schedules to hasten the resumption of civilian production and to provide jobs consistent with maximum war production for the battle against Japan.

He emphasized, however, that the statement does not involve any substantive change in the wage stabilization program.


Bu-Pro-Fire
Gas Heaters
A GOOD NAME TO REMEMBER FOR GREATER HEATING EFFICIENCY WITH LIQUEFIED PETROLEUM GASES.
DESIGNED ESPECIALLY FOR L. P. GASES
TENNESSEE ENAMEL MFG. CO.
NASHVILLE 9, TENNESSEE

PROPANE—New facilities will permit CITIES SERVICE to offer the LPG trade substantially larger volumes of PROPANE in 1945.

•

CITIES SERVICE experience in the LPG business covers a period of over 15 years. To the LPG distributor seeking a dependable source, CITIES SERVICE therefore offers attractive opportunities.

•

In LPG as well as in so many other fields—

CITIES SERVICE
means
GOOD SERVICE

CITIES SERVICE OIL CO. (Del.)
Bartlesville, Okla.

•

Other Sales Offices:
CHICAGO, CLEVELAND, KANSAS CITY, ST. PAUL, TORONTO

AGAEM Elects Harold Handley To Head Water Heater Section

Harold Handley, president and general manager of the Handley Brown Heater Co., was elected chairman of the Gas Water Heater Manufacturers' Section of the Association of Gas Appliance & Equipment Manufacturers at a recent meeting in Denver. The Section represents water heater manufacturers in the United States. Mr. Handley, who has served as vice chairman during the past two years, will take office October 1.

HAROLD HANDLEY

Active in the affairs of The American Gas Association, Mr. Handley is also a member of the Conversion Burner Manufacturers' Group of AGAEM.

Manufactured Gas Restrictions Lifted by OWU Order

The Office of War Utilities of the War Production Board announced April 30 the revocation of General Conservation Order L-174, which limited new loads on manufactured gas utilities systems and established machinery for emergency curtailment of service during periods of shortages.

The order was originally issued Sept. 30, 1942, and was last amended Dec. 22, 1943. It prohibited deliveries of manufactured gas to new installations of residential space heating equipment except under specified conditions and limited new industrial loads on manufactured gas systems in addition to providing the curtailment procedures.

Summertime

IS CHECK-UP TIME

Here's why Reznor suggests you allot some time of your busy days to checking over Reznor installations in the plants and stores of your town. These tune-ups give you an opportunity to talk heating to your customers. You can show them what they need and book orders on the spot for delivery when equipment is available.

That's the immediate return of tune-ups. Then you have an added benefit—people will like to do business with you if you show consideration for them.

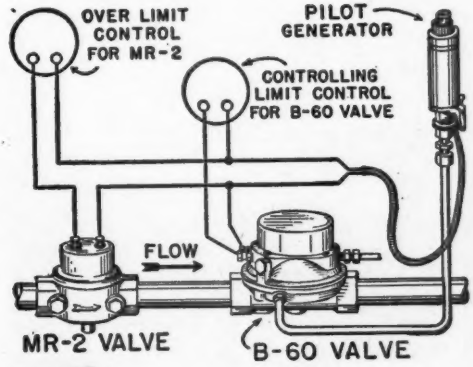
REZNOR REZNOR MANUFACTURING CO.
304 JAMES ST. • MERCER, PENNA.

"GAS HEATERS EXCLUSIVELY SINCE 1888"

For 100% shut-off of L P Gas

Here's the perfect combination—a General Controls Pilot Generator hooked up to an MR-2 Thermovalve and a B-60 Valve. Can be arranged so that in event of failure of pilot flame, both valves will close. 100% shut-off insured L P Gas. Ask for our new Service and Instruction Manual on Automatic Gas Heating Controls, No. SI-100.

Type K-20



GENERAL CONTROLS
801 ALLEN AVENUE GLENDALE 1, CALIF.

FACTORY BRANCHES: Philadelphia, Atlanta, Boston, Chicago, Kansas City, New York, Dallas, Denver, Detroit, Cleveland, Houston, San Francisco, Seattle, Pittsburgh.
Distributors in Principal Cities.

War-Time Sideline Boosts Gas Appliance Sales

BY BERT R. MERRILL

SALES of furniture, originally introduced as a wartime sideline at Aram's Appliance Co., Fresno, Calif., have been so successful that Aram Mosesian, owner, plans to build another store of exactly the same dimensions to accommodate a similar line after the war is over.

"I believe that war conditions really have been educational for many butane appliance dealers in my position," Mr. Mosesian indicated. "For one thing, dealing in various sidelines has shown a lot of us what we can and cannot merchandise adjacent to appliances. In my own case it has taught me that furniture in good lines, carefully presented to the same market, will actually help me to sell more appliances, and that any dealer with a market combining suburban and rural accounts can do the same thing."

Before Pearl Harbor, Aram's Appliance Co. was grossing approximately $50,000 per year in gas floor furnaces, water heaters, space heaters and ranges, selling 60% of this in a semi-rural section east of Fresno. Due to this large volume and the high priorities given San Joaquin Valley fruit growers, he was able to keep up a substantial priority business during 1941, closing up the books for that year with $35,000 in volume.

A furniture sideline has enabled the owner of this store to weather the war and create new LP-Gas prospects.

EVER-TITE

QUICK COUPLING UNITS

Tight Connections! No Threads!

SPEED—SAFETY—ECONOMY

For Your Post War Consideration

EVER-TITE COUPLING CO.

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PIPE & STEEL CORPORATION

Manufacturers and Distributors

ALHAMBRA CALIFORNIA

This included a small amount of furniture sales, which with 100% markup, and selling to the same customers, was such acceptable business that Mr. Mosesian determined to build up fast faltering stocks with a larger line.

Combines Furniture and Appliances

During the next year when a volume of 350 ranges and a similar number of floor furnaces fell off to less than 50, Mr. Mosesian began replacing empty display space with furniture—all carefully bought by much letter-writing and visiting of California markets. While the store volume dropped to $27,000, he built up a $5,000 inventory, starting out with dinettes and bed sets, and branching out into the full line, including overstuffed livingroom suites, bedroom suites, occasional furniture, infant furniture and novelties.

All of this stock is in the top third price bracket—which Mr. Mosesian stresses as necessary to make a good impression in any market. He uses every bit as much effort in buying furniture today as he once expended in selling butane equipment. This has necessitated many extra trips to furniture markets and dealings with OPA; but in the long run it allows him to keep up a profitable, rapidly-moving furniture stock only slightly below the former appliance turnover.

A surprising feature in connection with furniture merchandising is that 90% of it has been sold to former butane appliance customers on the store books. "This came about for two reasons," Mr. Mosesian explained. "First, anxious to get repeat business, I listed off all my butane accounts, and made a salesman out of my telephone—calling up to discuss the butane equipment in the house and then simply telling the lady of the house that we'd appreciate our furniture being considered as well. Since we've given good service through the war on appliance maintenance and repairs, we can count on plenty of goodwill. Thus, the average housewife will promise to drop in, and most of them do."

"The second reason is a "Want Book" which I maintain on every visitor to the store—an individual page to each one. It lists all merchandise sold to that customer, and everything in furniture or appliances she would like to buy. Thus when we receive a new shipment of furniture I am able to get on the phone, tell her that the mattress or dining table requested is in stock—often closing the sale over the telephone."

The "Want Book" thus lists bedsprings, overstuffed furniture, nursery furniture, linoleum and all else carried in the store. Keeping a ready contact with his customer, Mr. Mosesian is usually thoroughly conversant with their wants and can visualize his market accurately.

"We can sell a range first on priority, then a water heater, and probably add a bedroom suite, new carpet, and a couple of occasional chairs in three years," he indicated.

Linoleum Sales High

One of the most important departments built up has been linoleum, which has become a major profit source. For this work Mr. Mosesian formerly employed two full-time layers, but with the draft taking both of them, he now contracts the work to a local linoleum house at a flat price per yard laid in the customer's kitchen. Lineolum sales come from simply visiting the customer's home to make range repairs, and noting the condition of the kitchen floor while there.

With these methods, Mr. Mosesian has arrived at a volume in ex-

★ ★ ★ ★ ★ ★ ★

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ECONOMICAL
A.G.A. APPROVED

Order the "QUALITY LINE" and SAVE!

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Quotations on any type or size pressure vessel to meet your specifications.

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"KEEP 'EM FRYING"

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Deep-Fat Frying at Its Best

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★ Actual saving in fat alone more than pays total cost of gas required to operate them.

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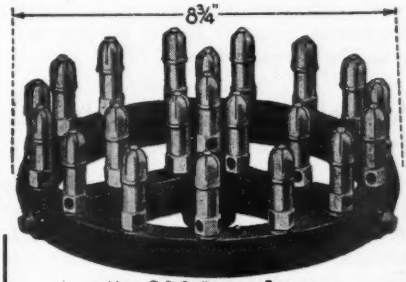

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THE BARBER GAS BURNER CO.

3704 Superior Ave. Cleveland 14, Ohio

cess of $40,000 on furniture and priority appliance sales. Most remarkable feature of all is that this business is almost 100% cash, coming from high farm incomes in his area, where many homes sorely needed new furniture. "I very seldom have as much as $2500 on the books," Mr. Mosesian stated. "Most of what credit business I do is paid up in 30 days when crop payments come in. To help keep up my furniture stock I buy the same way and discount every bill the 10th of the month. Actually it is the cleanest business I've ever done."

Will Divide Business After War

As soon as the war ends, Mr. Mosesian is all set to duplicate his present 80 x 50 white stucco building on a large lot next to the present store. One will handle appliances, the other furniture—and thus what might seem a wartime substitute is now permanently allied with butane appliance merchandising in this central California store.

Appeals Procedures Tightened By Amendment to Regulation

Measures designed to clarify the appeals procedures that all persons may use in securing relief from regulations, orders or administrative actions were announced on May 3 by the War Production Board.

In tightening its appeals procedures WPB amended Priority Regulation No. 16 and added Direction 1 to that Regulation to provide for:

(1) More accurate definition of "appeal" as applied to "appeals from administrative actions" as well as "appeals from orders and regulations."

(2) Clear understanding of the distinction between "appeals from orders and regulations" and "appeals from administrative actions."

(3) Methods for filing appeals as well as complete instructions as to what information must be submitted with all appeals.

Previously, in some instances, decisions of a division of WPB on appeals, were considered final. By the changes made in the regulation now all appellants have recourse to the Appeals Board. The only exception is an appeal taken from an action decided upon by the Office of War Utilities, WPB said.

How to Obtain Deferment of Refrigerator Servicemen

The following telegram from Washington, D. C., regarding the current method of obtaining certification for deferment of refrigeration servicemen under 30 years of age, has been received by Servel, Inc., and passed on to the trade.

"ACRMA has been working with National Refrigeration Service Council on critical refrigeration service manpower problem. The following telegram has just been received from W. R. Kromer, chairman of council: 'Concerning deferment of experienced refrigeration service men under 30, WPB has notified field offices by telegram to certify 50% number of men 7 or under for any one plant, balance will automatically be certified in Washington.

" 'If difficulty is experienced in obtaining certification on new or old cases request that local WPB office, call Webster Powell, WPB, Washington, Republic 7500, Extension 74108, or call him direct if necessary.

" 'Over 30 selective service national officers have agreed to intercede should any state director not recommend deferment of experienced refrigeration repairmen to local board of any qualified case carefully processed but rejected."

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- **LOSSES**
- **DELAYS**
- **EQUIPMENT**

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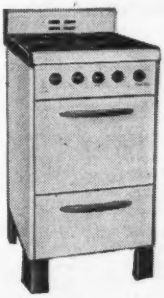

Here is a new Royal Rose gas range styled for comfortable, economical cooking and easy cleaning. New improvements include:

- All steel, flush-to-wall construction.
- Improved ball bearing, pull-out broiler.
- Sanitary, white porcelain enamel exterior.

Write for details

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HELP WANTED

RETAIL SALES MANAGER ESTABLISHED company. Good eastern territory. Also wholesale sales representatives both appliances and gas to established and new dealers. Write Box 650, BUTANE-PROPANE *News*, 1709 W. 8th St., Los Angeles 14, California.

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WANTED: PROPANE, BUTANE OR 7-70 Cylinders, any size; cylinder valves; regulators; bulk tanks; truck tanks; pumps and controls, any size. Box 495, Syracuse, N. Y.

EQUIPMENT FOR SALE

FOR SALE: PROPANE TRANSPORT 250 lb. W.P. tanks over 6,000 net gallons. 1938 3-axle truck and trailer. CITIES FUEL EXCHANGE, P.O. Box 365, Fresno, California.

FOR SALE: NEW ASME 200# WP 30,000 gallon tank. No priority. Write Box 640, BUTANE-PROPANE *News*, 1709 W. 8th St., Los Angeles 14, California.

ROADMASTER CARBURETOR, WITH GASoline adaptor: Vaporizer and Regulator; Economizer. Reconditioned by factory branch. Price $50.00. WESTERN NATURAL GAS CO., 1856 Challen Ave., Jacksonville 5, Florida.

FOR SALE: 1½ TON CABOVER CHEVROlet purchased new April, 1942, with 585 gallon capacity propane sphere, Smith Pump, Smith Meter, hose reels and hoses and combination cylinder platform for 30—100 lb. cylinders, 8¼ x 20 tires, 2 speed rear axles, Ensign carburetion. Available June 15, 1945. Write or phone Home Gas Co., Ontario, Calif.

FOR SALE—MOYNO PUMP, FACTORY RE-conditioned six months ago, not used since. Price $275.00 F.O.B. Detroit Lakes, Minnesota. Detroit Lakes Gas Co.

BUSINESS OPPORTUNITIES OFFERED

FOR SALE: WELL ESTABLISHED BUSINESS. Butane, Propane, Plumbing & Appliance, Combined. Must sell on account of illness. Central California. Write Box 660, BUTANE-PROPANE *News*, 1709 W. 8th St., Los Angeles 14, California.

FREE TO WAR VETERANS

If you are a veteran of World War No. 2, you may run a "Situation Wanted" classified ad in this column three consecutive months without charge.

Send in your copy!

Registration Requirements Tightened on Rationed Stoves

No new dealer outlets for stoves will be approved, the OPA announced May 22.

Nation-wide stove rationing went into effect Aug. 24, 1943. Dealers who sold stoves during the base period of 1941 and 1942 were eligible to register and deal in rationed stoves.

Those who discontinued stove lines before stoves were rationed and who did not register with OPA will no longer have preference over other applicants. This means some will be excluded from re-entering the business.

Among stoves now rationed are gas heaters and ranges.

Amendment Permits Sale of Idle, Excess Steel

Amendment 2 to Priorities Regulation 13 effective May 10, permits special sales of idle, excess or surplus steel, copper and copper base alloy, or aluminum in controlled material form without WPB authorization and without a CMP allotment symbol.

KEEP TUNED TO
BRILLIANT FIRE
LP-GAS HEATERS
IN 1945

Write for Latest Bulletin

THE OHIO FOUNDRY & MFG. CO.
STEUBENVILLE, OHIO
"Quality Heating Equipment Since 1846"

BRILLIANT FIRE
Brilliant Fire
GAS CIRCULATOR
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For Safety
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The ACCEPTED
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